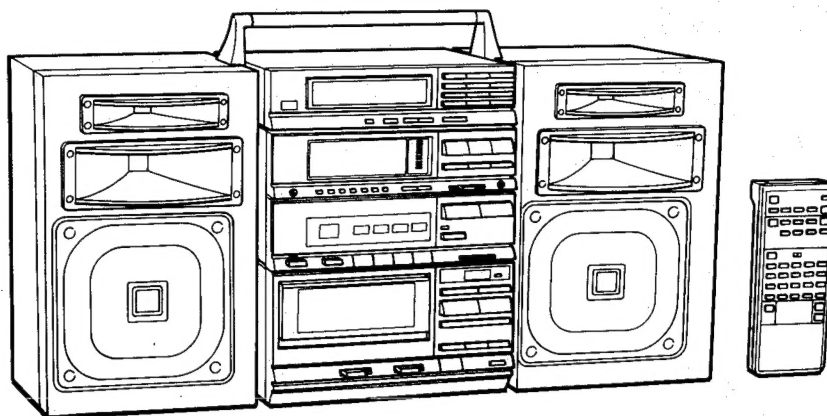


FH-909R

SERVICE MANUAL

*E Model
West Germany Model*



- FH-909R is composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

ACCESSORIES SUPPLIED

RM-809 Remote Commander (1)
Sony SUM-3(NS) batteries (2)
Flat cord (1)
CD player connecting cord (1)
Carrying handle (1)
Mounting blackets (2)
Mounting screws (10)

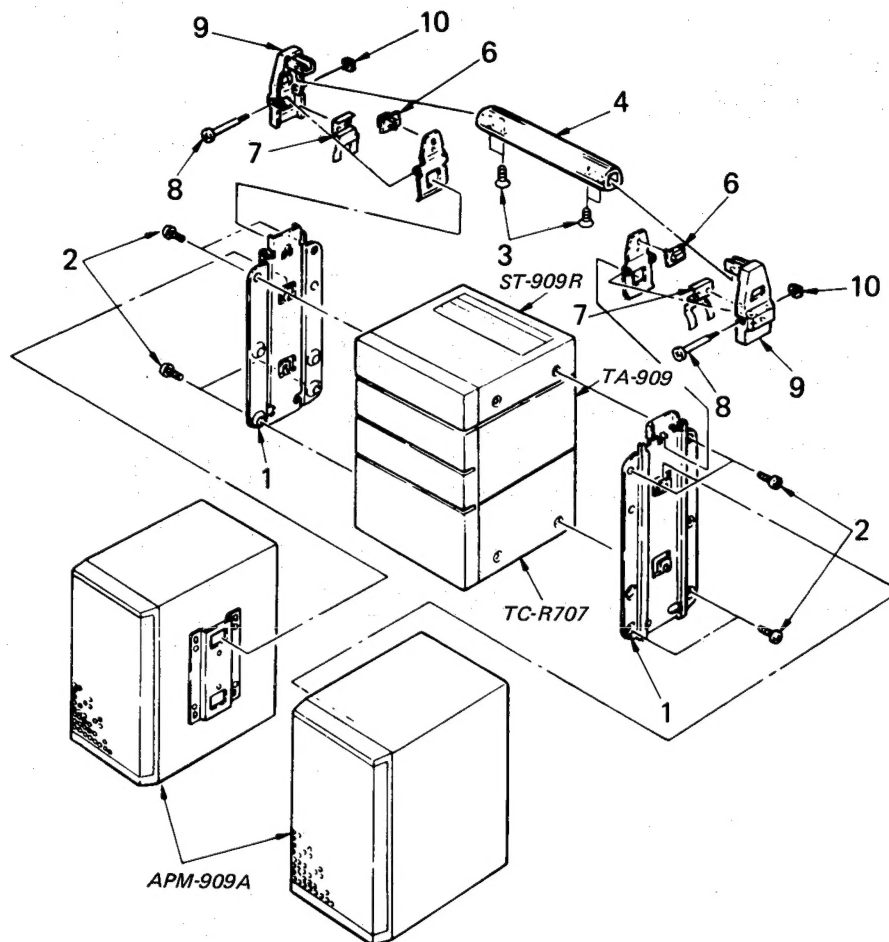
COMPONENT MODEL NAME FOR FH-909R

TUNER	ST-909R
CASSETTE DECK	TC-R707
AMPLIFIER	TA-909
SPEAKER SYSTEM	APM-909A



COMPACT HI-DENSITY
COMPONENT SYSTEM
SONY®

EXPLODED VIEW AND PARTS LIST



No.	Part No.	Description	Remarks
1	4-920-120-01	PLATE (A), SIDE	
2	X-4910-086-1	SCREW ASSY, SIDE PLATE	
3	7-685-247-19	SCREW +KTP 3X10 TYPE2 SLIT	
4	2-249-402-21	HANDLE	
5		
6	4-884-803-12	PUSH BUTTON	
7	4-902-942-03	SPRING, LEAF	
8	4-884-805-21	SHAFT	
9	4-910-361-11	HOLDER, HANDLE	
10	4-884-801-11	NUT, PLATE	

APM-909A PACKING MATERIAL

4-920-121-01	CUSHION
4-920-151-01	SHEET, PROTECTION

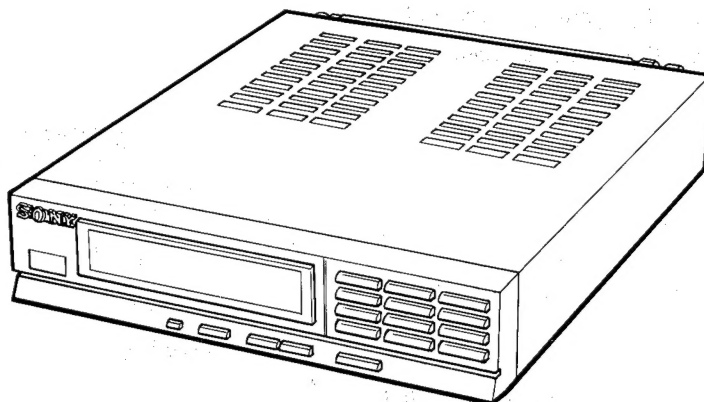
ACCESSORY & PACKING MATERIAL

Part No.	Description
1-463-997-11	REMOTE COMMANDER (RM-809)
1-558-233-11	CORD (WITH CONNECTOR) (SIRCS) 4P
1-559-821-11	CORD (WITH CONNECTOR)
2-394-123-01	COVER, BATTERY
3-769-867-11	(E).....MANUAL, INSTRUCTION
3-769-867-41	(West Germany)...MANUAL, INSTRUCTION
*4-922-762-01	(E).....INDIVIDUAL CARTON
*4-922-764-01	(West Germany)...INDIVIDUAL CARTON
*4-925-560-01	CUSHION, UPPER
*4-925-561-01	CUSHION, LOWER

ST-909R

SERVICE MANUAL

West Germany Model



- ST-909R is the FM STEREO/
FM-AM TUNER in FH-909R.

SPECIFICATIONS

System FM stereo, FM/AM superheterodyne tuner
Quartz-locked PLL digital synthesizer system

General

Dimensions Approx. 220 × 55 × 240 mm (w/h/d)
(8³/₄ × 2¹/₄ × 9¹/₂ inches)
incl. projecting parts and controls

Weight Approx. 1.0 kg (2 lb 4 oz) net

FM tuner section

Tuning range 87.5 to 108 MHz
Antenna Telescopic antenna
Antenna terminals 75 ohms unbalanced
Intermediate frequency 10.7 MHz
Usable sensitivity 2.3 μV (S/N = 30 dB/75 ohms)

MW/LW tuner section

		MW	LW
Tuning range		531 – 1602 kHz (except Italian model) 522 – 1611 kHz (for the Italian model)	153 – 281 kHz (except Italian model) 144 – 288 kHz (for the Italian model)
Antenna		Built-in ferrite bar antenna External antenna terminal	
Usable sensitivity	Built-in ferrite bar antenna	250 μV/m (999 kHz)	500 μV/m (230 kHz)
	External antenna	100 μV (999 kHz)	150 μV (230 kHz)

FM STEREO/FM-AM TUNER
SONY®

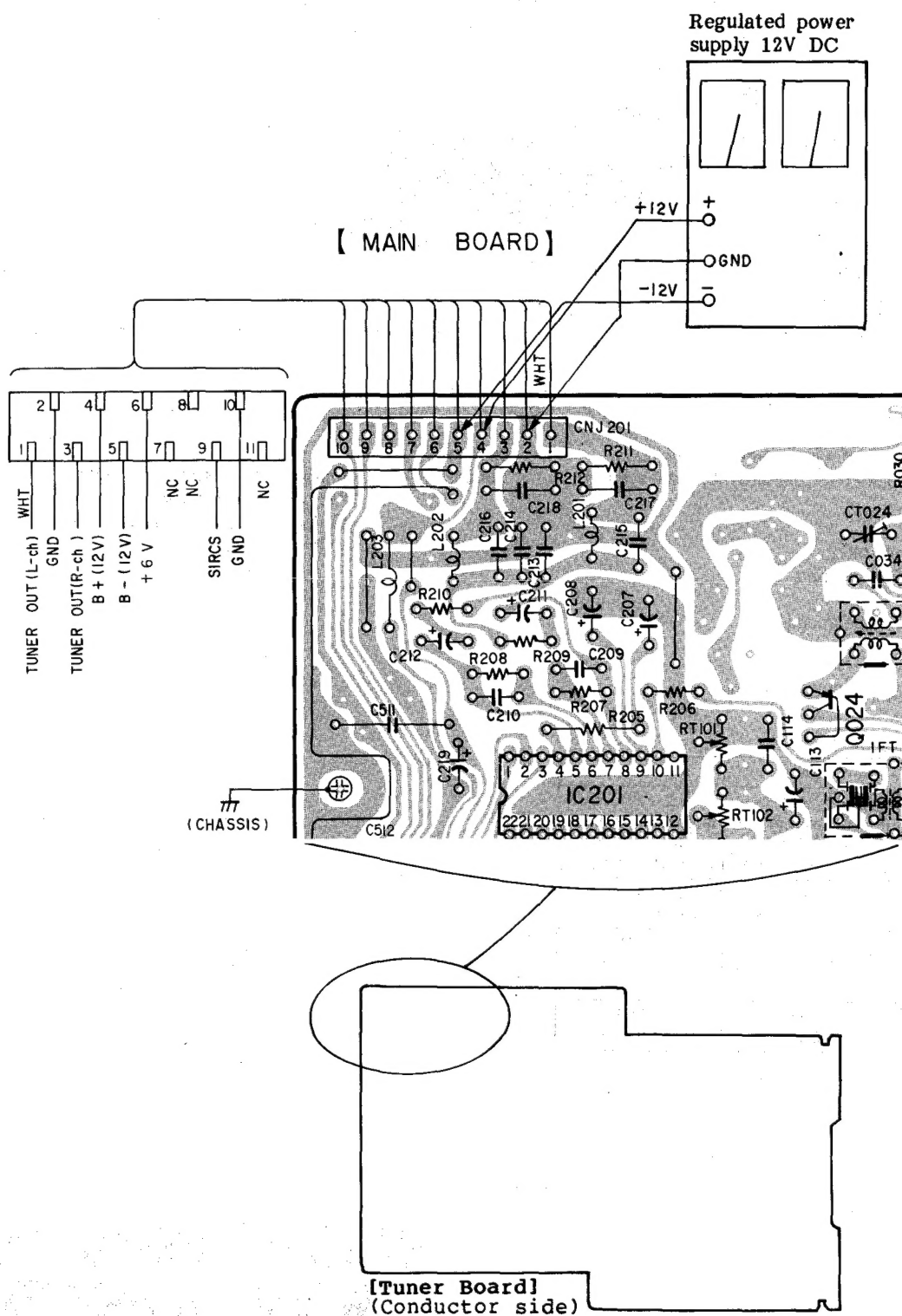


REPAIRING PRECAUTION

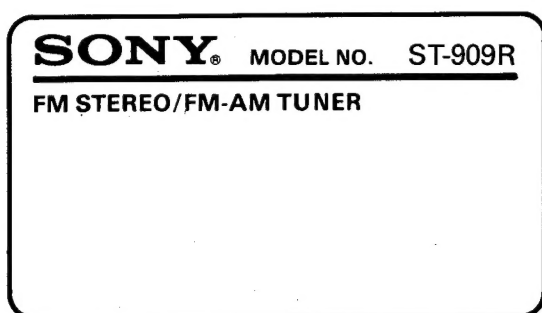
[To apply B+ voltage]

The power of this units is fed from other unit.

When the unit operates individually, connect the regulated power supply to the point as shown in the below figure.

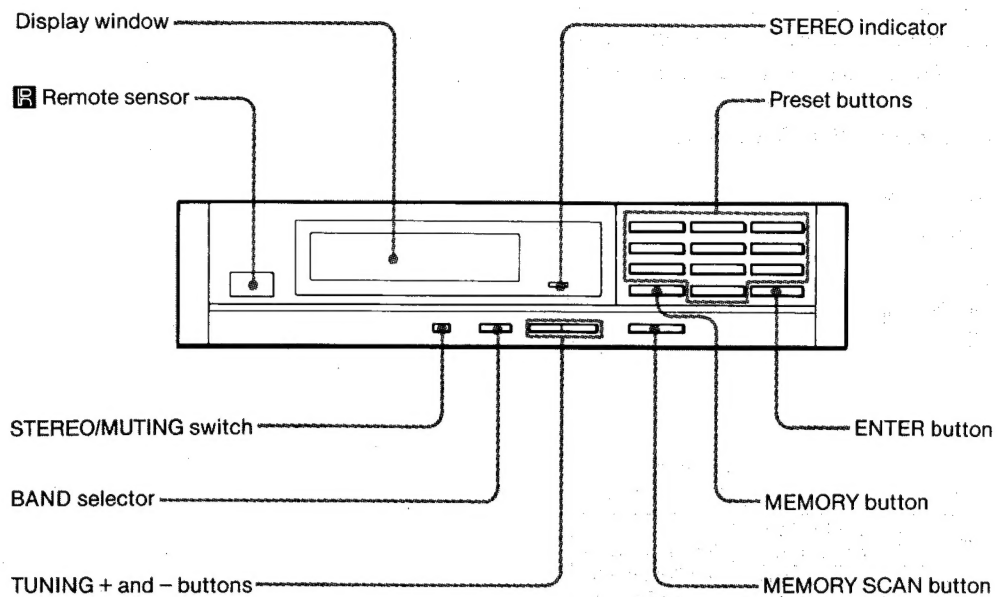


MODEL IDENTIFICATION



SECTION 1 GENERAL

PARTS IDENTIFICATION



SECTION 2

ELECTRICAL ADJUSTMENTS

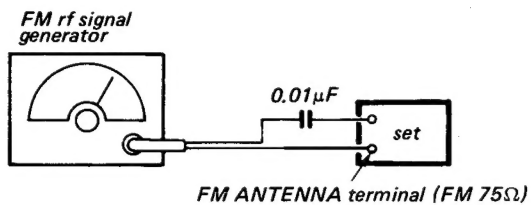
FM SECTION

Setting:

BAND selector switch: FM

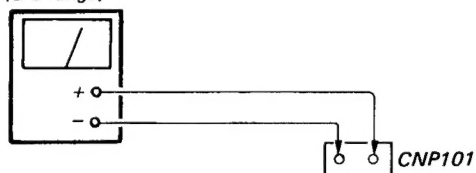
FM Discriminator Alignment (NULL Check)

Setting:



Carrier frequency: 98 MHz
 Modulation: 1 kHz, 75 kHz deviation
 Output level: 1 mV (60 dB)

VOM
 (DC range)



Procedure:

1. Push the TUNING (+, -) button for 98 MHz.
2. Adjust IFT101 for 0 V reading on the VOM.

IFT101

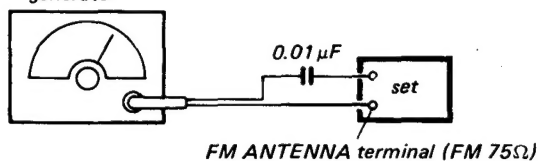
CNP101

MAIN BOARD
 (COMPONENT SIDE)

FM TUNED Indication Lighting Level Adjustment

Setting:

FM rf signal generator



Carrier frequency: 98 MHz

Modulation: 1 kHz, 75 kHz deviation

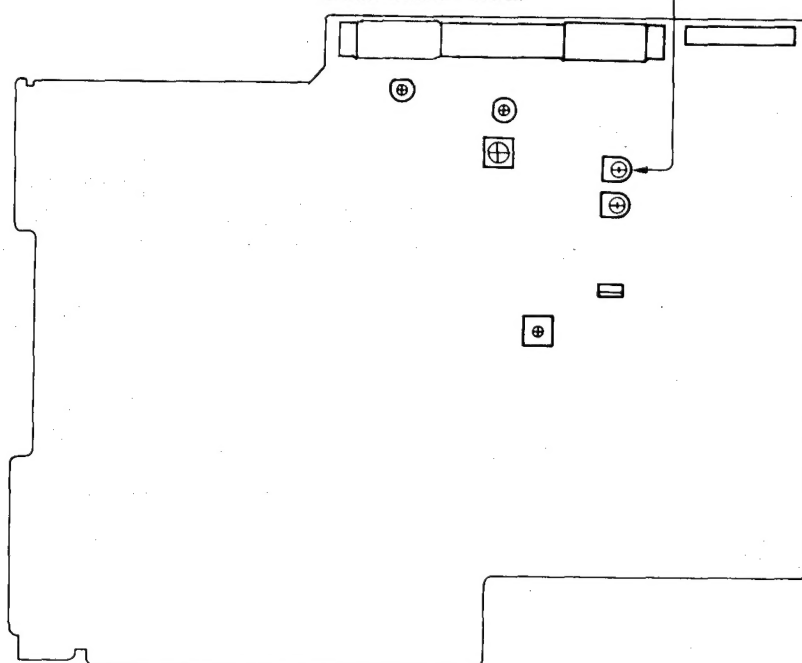
Output level: 22.4 μ V (27 dB)

Procedure:

1. Confirm that the **MUTING** indicator lights up on the display window.
2. Tune the set to 98 MHz.
3. Adjust RT101 so that the **TUNED** indicator goes on.

RT101

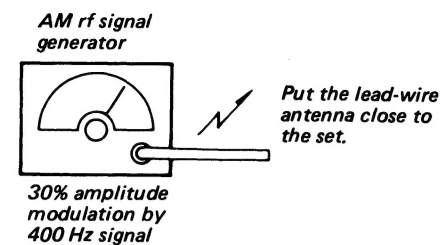
MAIN BOARD (COMPONENT SIDE)



AM SECTION

Setting:

BAND selector switch: MW or LW

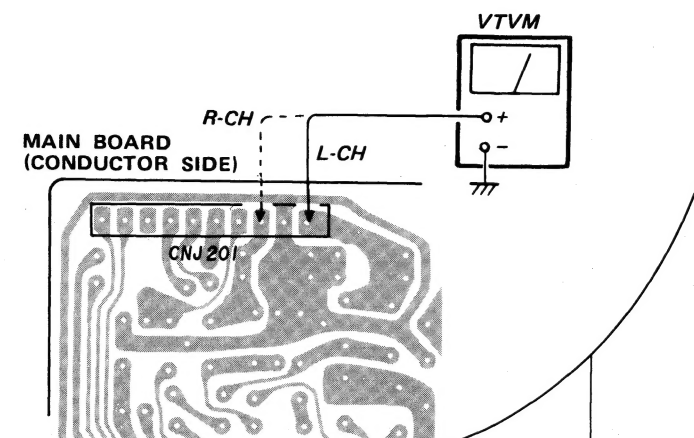


- Repeat the procedures in each adjustment several times, and the OSC voltage and tracking adjustments should be finally done by the trimmer capacitors.

Perform after LW TRACKING ADJUSTMENT.

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
603 kHz	L022
1,404 kHz	CT021

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
162 kHz	L022
270 kHz	CT023



MAIN BOARD (COMPONENT SIDE)

AM Tuned Indication Lighting Level Adjustment

BAND select switch: AM

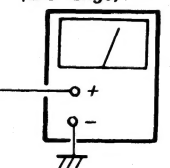
- Output 0.7 mV (57 dB), 1,000 kHz from AM rf signal generator.
- Adjust RT102 so that the LED lights up.

MW/LW OSC Voltage Adjustment

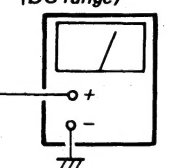
Procedure:

- Set BAND selector switch to MW.
- Push TUNING (+, -) button for 522 kHz. Adjust L023 for 1 - 1.1 V VOM ② reading.
- Push the button for 1,611 kHz. Adjust CT022 for 8 - 8.5 V VOM ② reading.
- Set BAND selector switch to LW.
- Push TUNING (+, -) button for 144 kHz. Adjust L025 for 1 - 1.1 V VOM ① reading.
- Push the button for 288 kHz. Adjust CT024 for 8 - 8.5 V VOM ① reading.

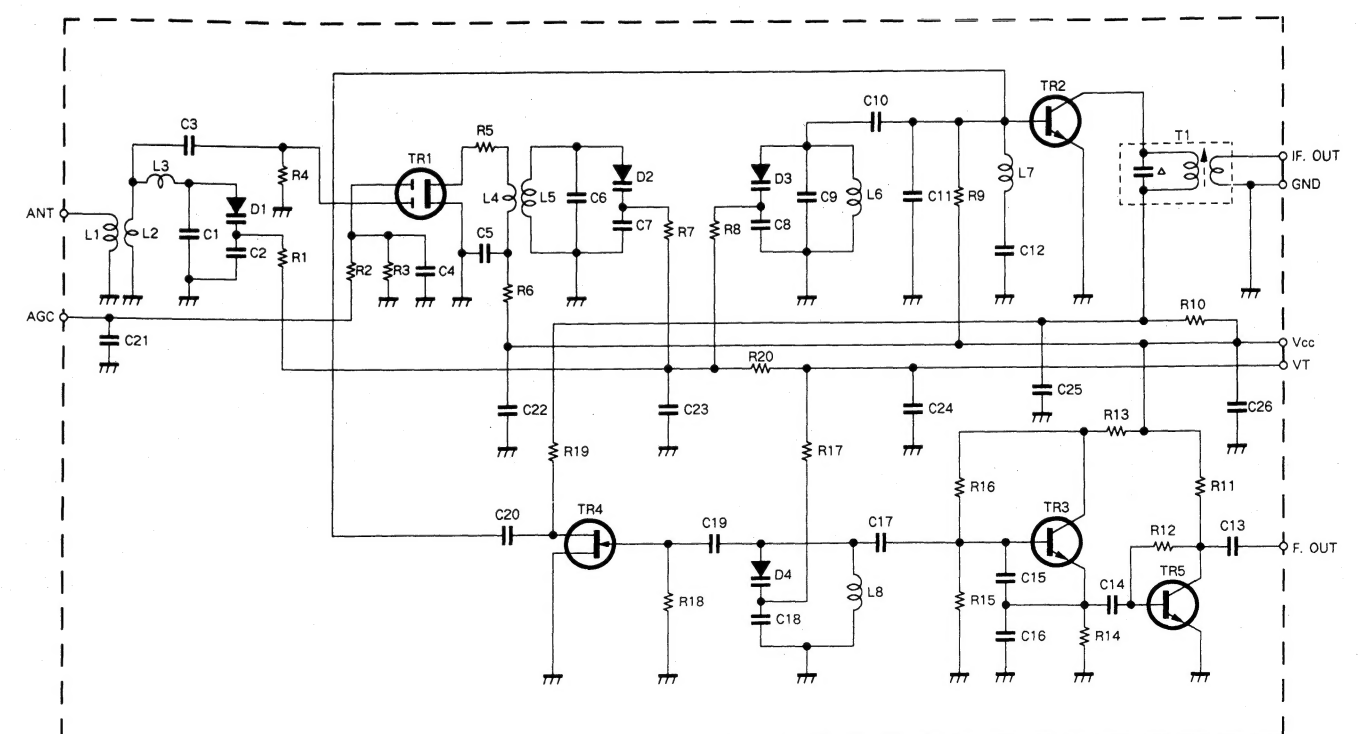
VOM ② : MW (DC range)



VOM ① : LW (DC range)



FM FRONT END (FE1) SCHEMATIC DIAGRAM



SECTION 3

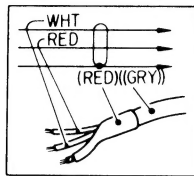
DIAGRAMS

3-1. PRINTED WIRING BOARDS

• See page 14 for Semiconductor Lead Layouts.

Note:

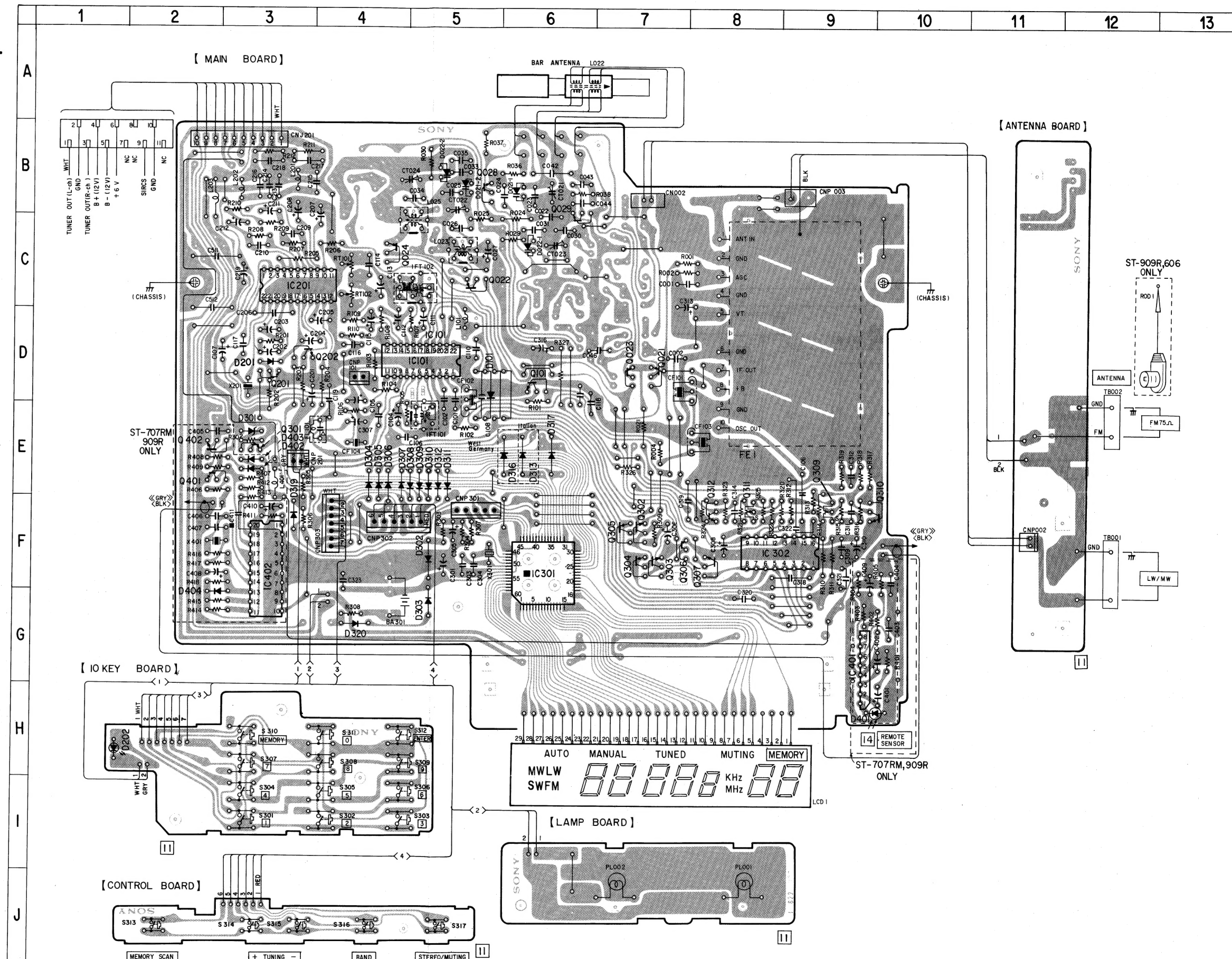
- Color code or sleeving over the end of the jacket.



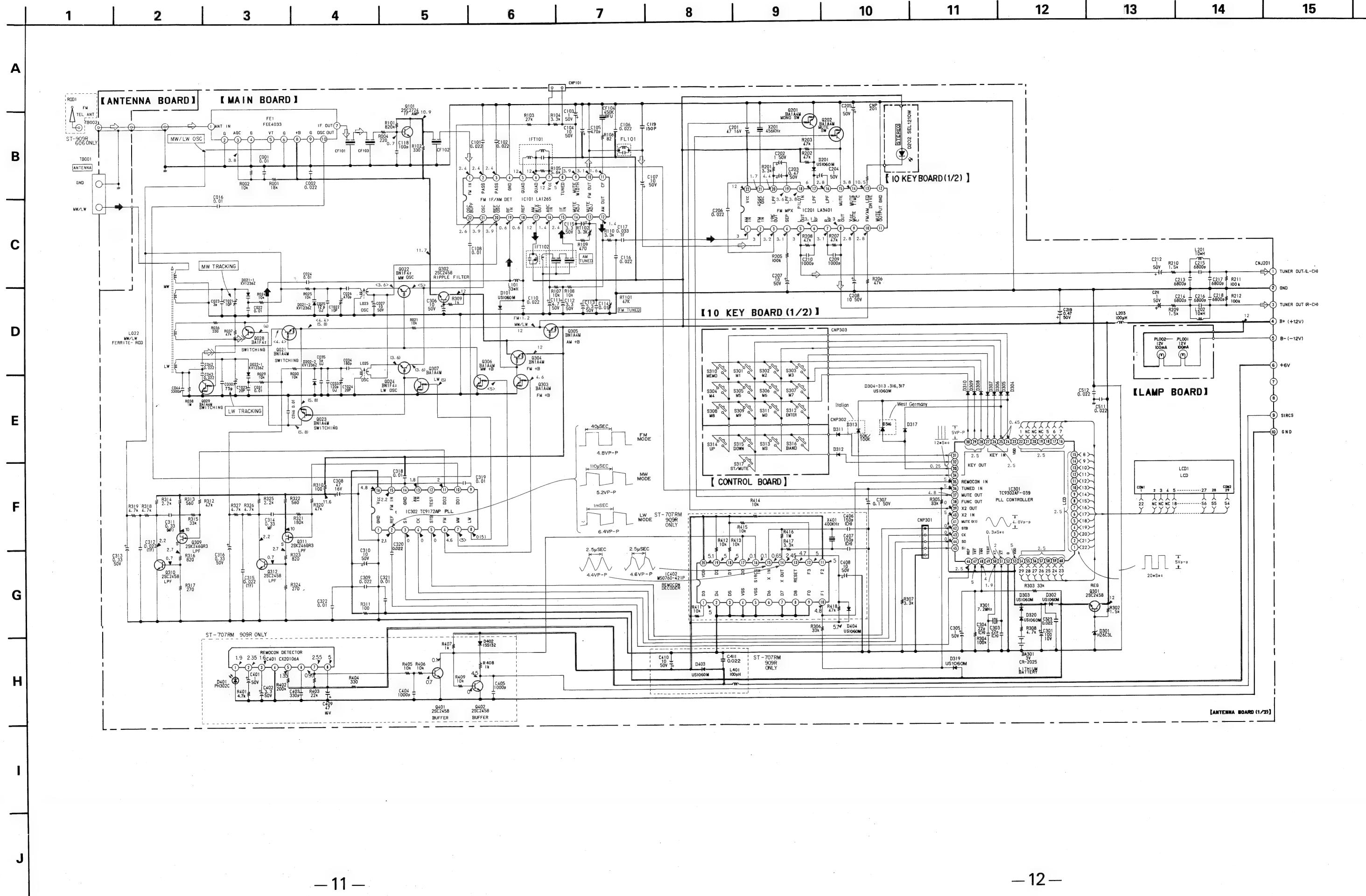
- ○ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- □ : indicates side identified with part number.

Semiconductor Location

Ref. No.		Ref. No.	
IC101	D-4	D021-1	B-5
IC201	C-3	D021-2	B-5
IC301	F-6	D022-1	C-6
IC302	F-8	D022-2	B-5
IC401	G-9		
IC402	F-3		
Q021	D-7	D101	D-5
Q022	C-5	D201	D-3
Q023	D-7	D202	H-1
Q024	C-4	D301	E-3
Q028	B-5	D302	F-5
Q029	B-6	D303	F-5
Q101	D-6	D304	E-4
Q201	D-3	D305	E-4
Q202	D-3	D306	E-4
Q301	E-3	D307	E-4
Q302	F-7	D308	E-4
Q303	F-7	D309	E-4
Q304	F-7	D310	E-5
Q305	F-7	D311	E-5
Q306	F-7	D312	E-5
Q307	F-7	D313	E-6
Q309	F-9	D316	E-5
Q310	F-9	D317	E-6
Q311	E-8	D319	F-3
Q312	E-8		
Q401	E-2	D320	G-4
Q402	E-2	D401	H-9
		D402	E-3
		D403	E-3
		D404	F-2



3-2. SCHEMATIC DIAGRAM . See page 13 for note.



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Δ : internal component.

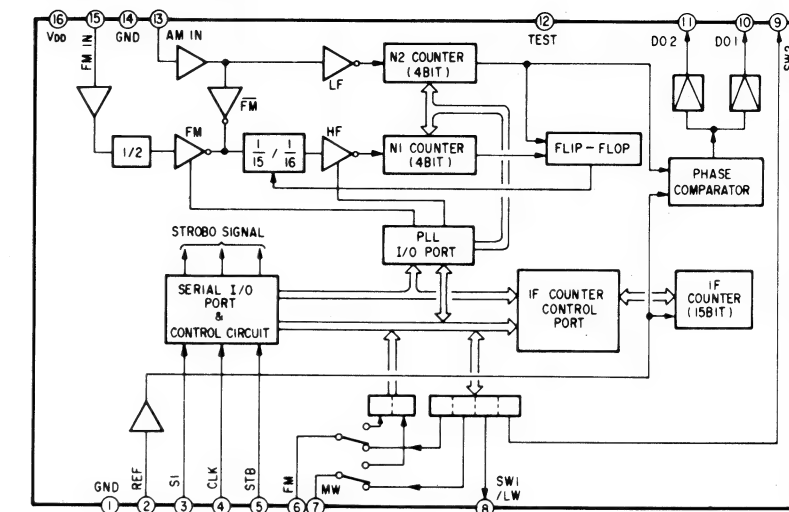
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.

- --- : B+ bus.
- --- : B- bus.
- --- : adjustment for repair.
- --- : FM signal path.
- --- : MW signal path.
- --- : LW signal path.

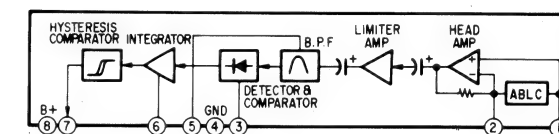
Switches:

Ref. No.	Switch	Position
S301	1	OFF
S302	2	OFF
S303	3	OFF
S304	4	OFF
S305	5	OFF
S306	6	OFF
S307	7	OFF
S308	8	OFF
S309	9	OFF
S310	MEMORY	OFF
S311	0	OFF
S312	ENTER	OFF
S313	MEMORY SCAN	OFF
S314	TUNING +	OFF
S315	TUNING -	OFF
S316	BAND	OFF
S317	STEREO MUTING	OFF

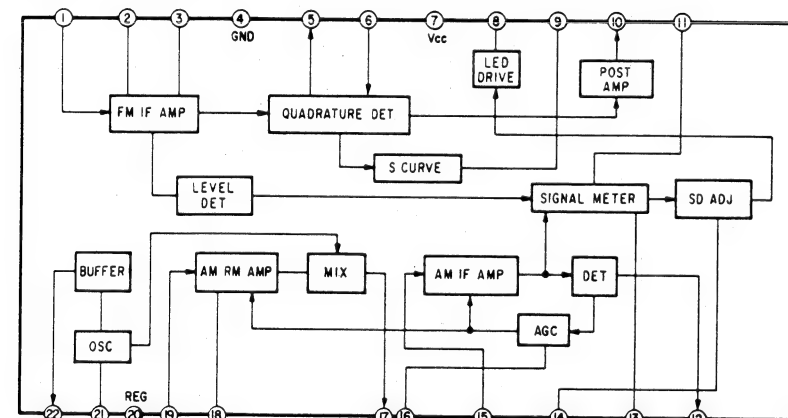
IC302 TC9172AP



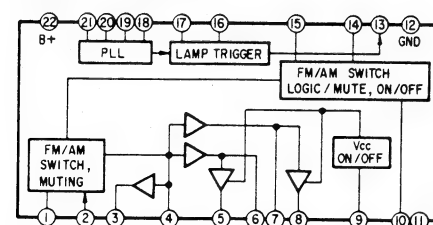
IC401 CX20106A



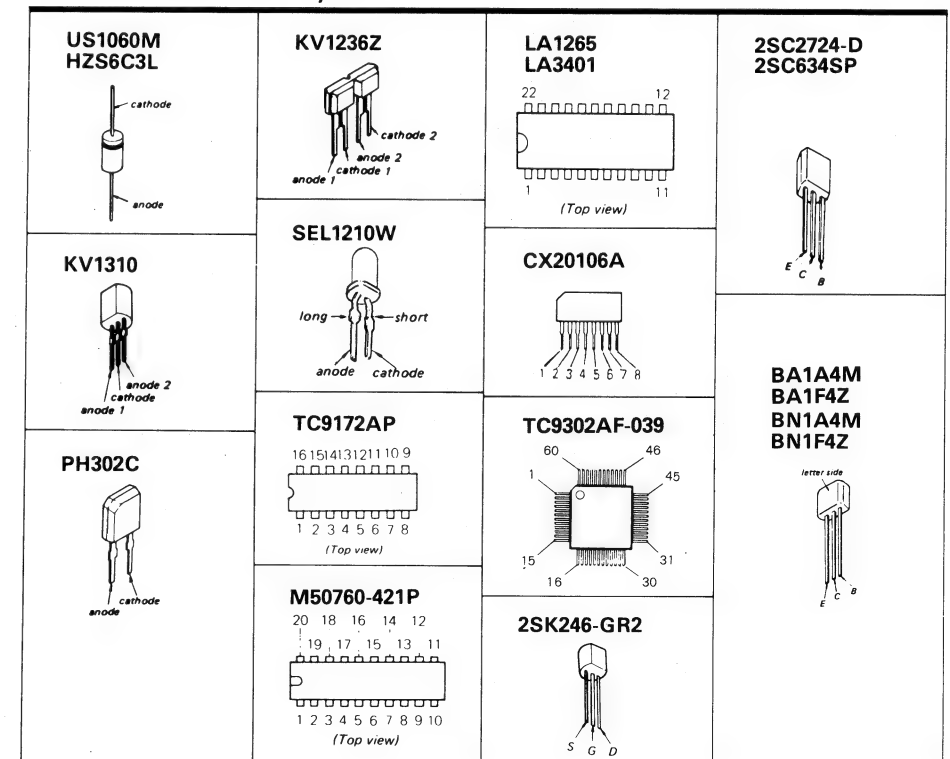
IC101 LA1265



IC201 LA3401



• Semiconductor Lead Layouts




SECTION 4



EXPLODED VIEWS

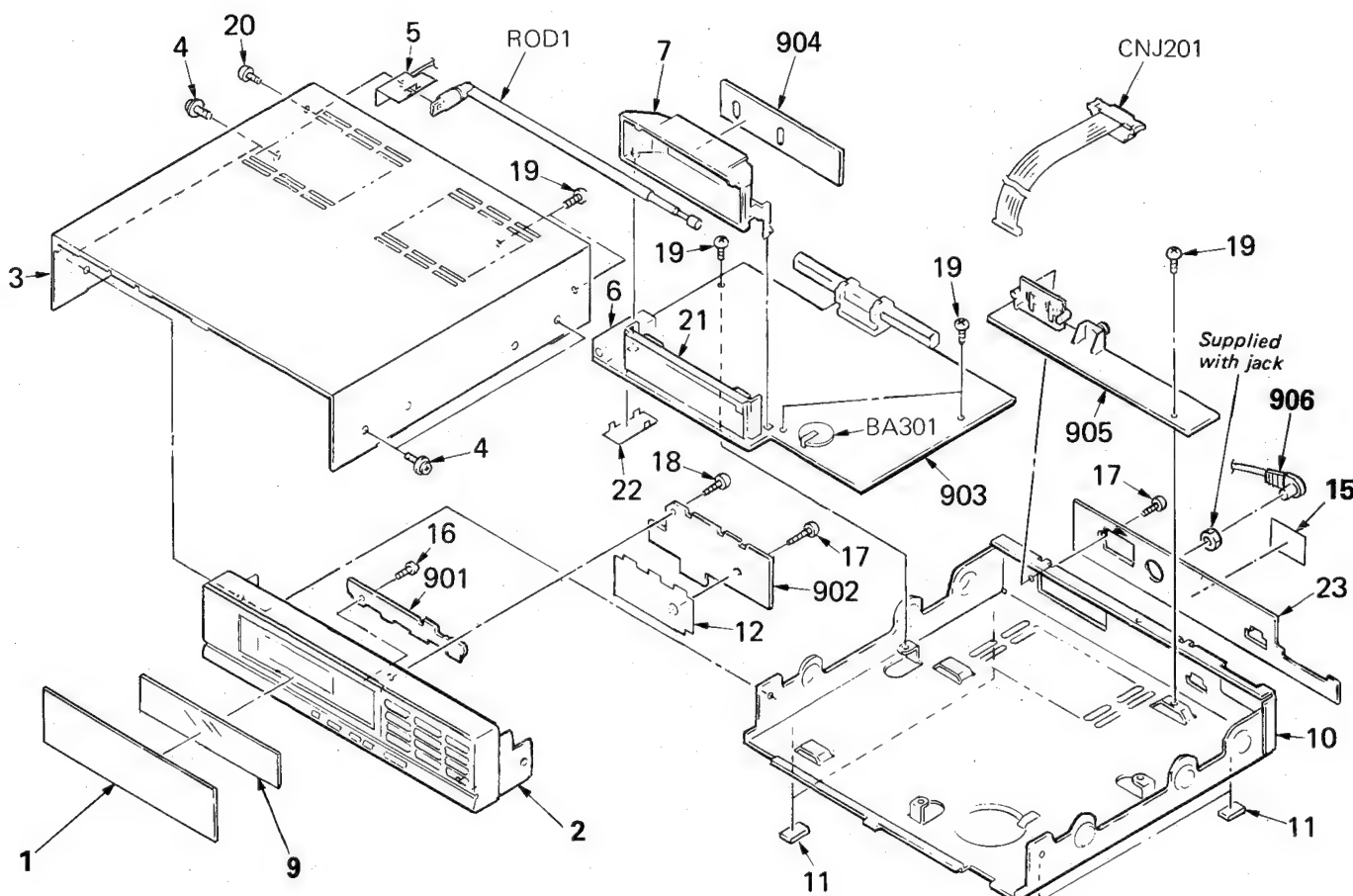
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)

Cabinet's Color Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



<u>No.</u>	<u>Part No.</u>	<u>Description</u>
1	4-919-610-51	PLATE, ORNAMENTAL
2	X-4919-663-1	PANEL ASSY, FRONT
3	4-920-137-01	CASE
4	3-704-366-01	SCREW (CASE) (M3X8)
5	*4-919-611-01	BRACKET, ANT
6	*4-909-705-01	PLATE, SHIELD
7	*4-917-275-01	HOUSE, LAMP
8		
9	4-919-609-31	PLATE, INDICATION
10	*4-919-617-11	CHASSIS
11	4-919-608-01	FOOT
12	*4-919-607-01	SPACER
13		
14		
15	*4-922-713-01	(West Germany)...LABEL, MODEL NUMBER
16	7-685-133-19	SCREW +P 2.6X6 TYPE2 SLIT
17	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S

No.	Part No.	Description
18	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
19	7-682-147-01	SCREW +BVTT 3X6 (S)
20	7-682-547-09	SCREW +B 3X6
21	*4-909-633-01	ILLUMINATOR
22	*4-920-149-01	PLATE (A), SHIELD
23	*4-919-606-11	COVER, REAR
901	*1-622-321-11	PC BOARD, CONTROL
902	*1-622-320-11	PC BOARD, 10 KEY
903	*A-4351-641-A	MOUNTED PCB, TUNER
904	*1-622-323-11	PC BOARD, LAMP
905	*1-622-322-11	PC BOARD, ANTENNA
906	*1-562-908-11	CONNECTOR, FEMALE (NO SHIELD)
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)
CNJ201	1-559-816-11	CORD (WITH CONNECTOR)
ROD1	1-501-270-00	ANTENNA, TELESCOPIC

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ PF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA....: μ A...., UPA....: μ PA....,UPC....: μ PC, UPD....: μ PD....

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
901	*1-622-321-11	PC BOARD, CONTROL					C201	1-124-477-11	ELECT	47MF	20%	16V	
902	*1-622-320-11	PC BOARD, 10 KEY					C202	1-124-499-11	ELECT	1MF	20%	50V	
903	*A-4351-641-A	MOUNTED PCB, TUNER					C203	1-124-902-00	ELECT	0.47MF	20%	50V	
904	*1-622-323-11	PC BOARD, LAMP					C204	1-124-499-11	ELECT	1MF	20%	50V	
905	*1-622-322-11	PC BOARD, ANTENNA					C205	1-124-499-11	ELECT	1MF	20%	50V	
906	*1-562-908-11	CONNECTOR, FEMALE (NO SHIELD)					C206	1-161-494-00	CERAMIC	0.022MF	30%	25V	
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)					C207	1-123-875-11	ELECT	10MF	20%	50V	
C001	1-161-379-00	CERAMIC	0.01MF	20%	16V		C208	1-123-875-11	ELECT	10MF	20%	50V	
C002	1-101-005-00	CERAMIC	0.022MF		50V		C209	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C016	1-161-379-00	CERAMIC	0.01MF	20%	16V		C210	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C022	1-161-379-00	CERAMIC	0.01MF	20%	16V		C211	1-124-499-11	ELECT	1MF	20%	50V	
C023	1-102-936-00	CERAMIC	3PF		50V		C212	1-124-499-11	ELECT	1MF	20%	50V	
C024	1-161-379-00	CERAMIC	0.01MF	20%	16V		C213	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C025	1-102-949-00	CERAMIC	12PF	5%	50V		C214	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C026	1-130-014-00	FILM	470PF	5%	50V		C215	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C027	1-123-875-11	ELECT	10MF	20%	50V		C216	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C030	1-101-890-00	CERAMIC	75PF	5%	50V		C217	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C031	1-161-379-00	CERAMIC	0.01MF	20%	16V		C218	1-161-329-00	CERAMIC	0.0068MF	20%	16V	
C033	1-102-816-00	CERAMIC	120PF	5%	50V		C219	1-124-902-00	ELECT	0.47MF	20%	50V	
C034	1-130-047-00	FILM	180PF	5%	50V		C220	1-124-902-00	ELECT	0.47MF	20%	50V	
C035	1-102-942-00	CERAMIC	5PF		50V		C301	1-124-443-00	ELECT	100MF	20%	10V	
C042	1-161-494-00	CERAMIC	0.022MF	30%	25V		C303	1-102-959-00	CERAMIC	22PF	5%	50V	
C043	1-101-005-00	CERAMIC	0.022MF		50V		C304	1-102-959-00	CERAMIC	22PF	5%	50V	
C044	1-161-327-00	CERAMIC	0.0033MF	20%	16V		C305	1-124-499-11	ELECT	1MF	20%	50V	
C046	1-161-379-00	CERAMIC	0.01MF	20%	16V		C306	1-123-875-11	ELECT	10MF	20%	50V	
C101	1-101-005-00	CERAMIC	0.022MF		50V		C307	1-124-463-00	ELECT	0.1MF	20%	50V	
C102	1-101-005-00	CERAMIC	0.022MF		50V		C308	1-124-477-11	ELECT	47MF	20%	16V	
C103	1-124-499-11	ELECT	1MF	20%	50V		C309	1-101-005-00	CERAMIC	0.022MF		50V	
C104	1-123-875-11	ELECT	10MF	20%	50V		C310	1-123-875-11	ELECT	10MF	20%	50V	
C105	1-162-290-31	CERAMIC	470PF	10%	50V		C311	1-136-171-00	FILM	0.33MF	5%	50V	
C106	1-101-005-00	CERAMIC	0.022MF		50V		C312	1-130-487-00	MYLAR	0.022MF	5%	50V	
C107	1-123-875-11	ELECT	10MF	20%	50V		C313	1-124-252-00	ELECT	0.33MF	20%	50V	
C108	1-161-379-00	CERAMIC	0.01MF	20%	16V		C314	1-136-171-00	FILM	0.33MF	5%	50V	
C110	1-101-005-00	CERAMIC	0.022MF		50V		C315	1-130-487-00	MYLAR	0.022MF	5%	50V	
C111	1-124-927-11	ELECT	4.7MF	20%	50V		C316	1-124-252-00	ELECT	0.33MF	20%	50V	
C112	1-123-382-00	ELECT	3.3MF	20%	50V		C318	1-161-379-00	CERAMIC	0.01MF	20%	16V	
C113	1-123-382-00	ELECT	3.3MF	20%	50V		C319	1-161-379-00	CERAMIC	0.01MF	20%	16V	
C114	1-161-379-00	CERAMIC	0.01MF	20%	16V		C320	1-130-487-00	MYLAR	0.022MF	5%	50V	
C115	1-123-382-00	ELECT	3.3MF	20%	50V		C321	1-161-379-00	CERAMIC	0.01MF	20%	16V	
C116	1-101-005-00	CERAMIC	0.022MF		50V		C322	1-161-379-00	CERAMIC	0.01MF	20%	16V	
C117	1-130-489-00	MYLAR	0.033MF	5%	50V		C323	1-101-005-00	CERAMIC	0.022MF		50V	
C118	1-162-282-31	CERAMIC	100PF	10%	50V		C401	1-124-499-11	ELECT	1MF	20%	50V	
C119	1-162-284-31	CERAMIC	150PF	10%	50V		C402	1-123-382-00	ELECT	3.3MF	20%	50V	
							C403	1-162-288-31	CERAMIC	330PF	10%	50V	
							C404	1-162-294-31	CERAMIC	0.001MF	10%	50V	

Ref.No.	Part No.	Description
C405	1-162-294-31	CERAMIC 0.001MF 10% 50V
C406	1-101-361-00	CERAMIC 150PF 5% 50V
C407	1-101-361-00	CERAMIC 150PF 5% 50V
C408	1-123-875-11	ELECT 10MF 20% 50V
C409	1-124-477-11	ELECT 47MF 20% 16V
C410	1-123-875-11	ELECT 10MF 20% 50V
C411	1-161-494-00	CERAMIC 0.022MF 30% 25V
C511	1-161-494-00	CERAMIC 0.022MF 30% 25V
C512	1-161-494-00	CERAMIC 0.022MF 30% 25V
CF101	1-567-389-11	FILTER, CERAMIC
CF102	1-567-389-11	FILTER, CERAMIC
CF103	1-567-389-11	FILTER, CERAMIC
CF104	1-527-981-00	FILTER, CERAMIC
CNJ201	1-559-816-11	CORD (WITH CONNECTOR)
CNP002*1	1-564-336-00	PIN, CONNECTOR 2P
CNP003*1	1-535-115-00	TERMINAL
CNP101*1	1-560-060-00	PIN, CONNECTOR 2P
CNP201*1	1-564-336-00	PIN, CONNECTOR 2P
CNP301*1	1-560-063-00	PIN, CONNECTOR 5P
CNP302*1	1-560-064-00	PIN, CONNECTOR 6P
CNP303*1	1-564-341-11	PIN, CONNECTOR 7P
CT021	1-141-227-00	CAP, CERAMIC TRIMMER
CT022	1-141-227-00	CAP, CERAMIC TRIMMER
CT023	1-141-227-00	CAP, CERAMIC TRIMMER
CT024	1-141-227-00	CAP, CERAMIC TRIMMER
D021	8-719-923-64	DIODE KV1236Z
D022	8-719-923-64	DIODE KV1236Z
D101	8-719-000-26	DIODE US1060M
D201	8-719-000-26	DIODE US1060M
D202	8-719-303-13	DIODE SEL1210W
D301	8-719-933-41	DIODE HZS6C3L
D302	8-719-000-26	DIODE US1060M
D303	8-719-000-26	DIODE US1060M
D304	8-719-000-26	DIODE US1060M
D305	8-719-000-26	DIODE US1060M
D306	8-719-000-26	DIODE US1060M
D307	8-719-000-26	DIODE US1060M
D308	8-719-000-26	DIODE US1060M
D309	8-719-000-26	DIODE US1060M
D310	8-719-000-26	DIODE US1060M
D311	8-719-000-26	DIODE US1060M
D312	8-719-000-26	DIODE US1060M
D316	8-719-000-26	DIODE US1060M
D317	8-719-000-26	DIODE US1060M
D319	8-719-000-26	DIODE US1060M
D320	8-719-000-26	DIODE US1060M
D401	8-719-123-68	PH302C
D402	8-719-000-26	DIODE US1060M
D403	8-719-000-26	DIODE US1060M
D404	8-719-000-26	DIODE US1060M
FE1	1-463-857-11	FRONT END (FM)
FL101	1-235-126-00	ENCAPSULATED COMPONENT
IC101	8-759-801-81	IC LA1265
IC201	8-759-801-80	IC LA3401
IC301	8-759-230-50	IC TC9302AF-039

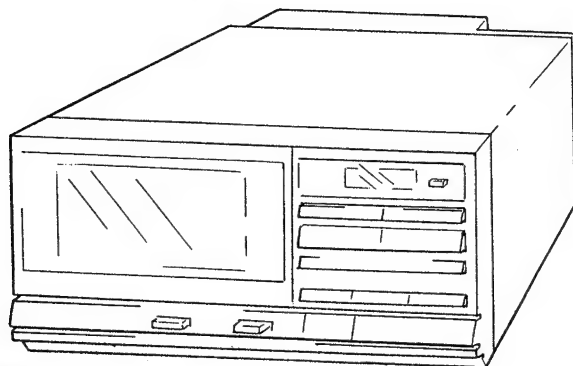
Ref.No.	Part No.	Description
IC302	8-759-230-16	IC TC9172AP
IC401	8-759-602-54	IC CX20106A
IC402	8-759-603-43	IC M50760-421P
IFT101	1-404-659-11	COIL, DISCRIMINATOR
IFT102	1-404-713-11	TRANSFORMER, IF
L022	1-402-151-11	ANTENNA, FERRITE-ROD (LW/MW)
L023	1-406-089-11	COIL (OSC)
L025	1-406-207-11	COIL, LW (OSC)
L101	1-408-930-00	INDUCTOR 33MMH
L201	1-408-924-00	INDUCTOR 10MMH
L202	1-408-924-00	INDUCTOR 10MMH
L203	1-410-601-21	INDUCTOR 100UH
L401	1-410-601-21	INDUCTOR 100UH
LCD1	1-807-453-41	DISPLAY PANEL, LIQUID CRYSTAL
PL001	1-518-527-51	LAMP, PILOT
PL002	1-518-527-51	LAMP, PILOT
Q021	8-729-115-15	TRANSISTOR BN1A4M
Q022	8-729-115-33	TRANSISTOR BN1F4Z
Q023	8-729-115-15	TRANSISTOR BN1A4M
Q024	8-729-115-33	TRANSISTOR BN1F4Z
Q028	8-729-115-93	TRANSISTOR BA1F4Z
Q029	8-729-115-79	TRANSISTOR BA1A4M
Q101	8-729-672-43	TRANSISTOR 2SC2724-D
Q201	8-729-115-79	TRANSISTOR BA1A4M
Q202	8-729-115-79	TRANSISTOR BA1A4M
Q301	8-729-600-27	TRANSISTOR 2SC634SP
Q302	8-729-600-27	TRANSISTOR 2SC634SP
Q303	8-729-115-79	TRANSISTOR BA1A4M
Q304	8-729-115-15	TRANSISTOR BN1A4M
Q305	8-729-115-15	TRANSISTOR BN1A4M
Q306	8-729-115-79	TRANSISTOR BA1A4M
Q307	8-729-115-79	TRANSISTOR BA1A4M
Q309	8-729-201-56	TRANSISTOR 2SK246GR2
Q310	8-729-600-27	TRANSISTOR 2SC634SP
Q311	8-729-201-56	TRANSISTOR 2SK246GR2
Q312	8-729-600-27	TRANSISTOR 2SC634SP
Q401	8-729-600-27	TRANSISTOR 2SC634SP
Q402	8-729-600-27	TRANSISTOR 2SC634SP
R001	1-249-432-11	CARBON 18K 5% 1/4W
R002	1-249-429-11	CARBON 10K 5% 1/4W
R004	1-249-409-11	CARBON 220 5% 1/4W
R021	1-249-429-11	CARBON 10K 5% 1/4W
R024	1-249-429-11	CARBON 10K 5% 1/4W
R025	1-249-429-11	CARBON 10K 5% 1/4W
R029	1-249-429-11	CARBON 10K 5% 1/4W
R030	1-249-429-11	CARBON 10K 5% 1/4W
R036	1-249-411-11	CARBON 330 5% 1/4W
R037	1-249-437-11	CARBON 47K 5% 1/4W
R038	1-247-903-00	CARBON 1M 5% 1/4W
R101	1-247-901-11	CARBON 820K 5% 1/4W
R102	1-249-411-11	CARBON 330 5% 1/4W
R103	1-249-434-11	CARBON 27K 5% 1/4W
R104	1-249-423-11	CARBON 3.3K 5% 1/4W
R105	1-249-426-11	CARBON 5.6K 5% 1/4W
R106	1-249-404-00	CARBON 82 5% 1/4W
R107	1-249-429-11	CARBON 10K 5% 1/4W

Ref.No.	Part No.	Description			
R108	1-249-429-11	CARBON	10K	5%	1/4W
R109	1-249-413-11	CARBON	470	5%	1/4W
R110	1-249-423-11	CARBON	3.3K	5%	1/4W
R201	1-249-423-11	CARBON	3.3K	5%	1/4W
R202	1-249-437-11	CARBON	47K	5%	1/4W
R203	1-249-437-11	CARBON	47K	5%	1/4W
R204	1-249-417-11	CARBON	1K	5%	1/4W
R205	1-249-441-11	CARBON	100K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R207	1-249-437-11	CARBON	47K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-419-11	CARBON	1.5K	5%	1/4W
R210	1-249-419-11	CARBON	1.5K	5%	1/4W
R211	1-249-441-11	CARBON	100K	5%	1/4W
R212	1-249-441-11	CARBON	100K	5%	1/4W
R302	1-249-419-11	CARBON	1.5K	5%	1/4W
R303	1-249-435-11	CARBON	33K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R305	1-249-435-11	CARBON	33K	5%	1/4W
R306	1-249-435-11	CARBON	33K	5%	1/4W
R307	1-249-423-11	CARBON	3.3K	5%	1/4W
R308	1-249-425-11	CARBON	4.7K	5%	1/4W
R309	1-249-417-11	CARBON	1K	5%	1/4W
R310	1-249-405-11	CARBON	100	5%	1/4W
R311	1-249-405-11	CARBON	100	5%	1/4W
R312	1-249-437-11	CARBON	47K	5%	1/4W
R313	1-249-414-11	CARBON	560	5%	1/4W
R314	1-249-421-11	CARBON	2.2K	5%	1/4W
R315	1-249-435-11	CARBON	33K	5%	1/4W
R316	1-249-416-11	CARBON	820	5%	1/4W
R317	1-249-410-11	CARBON	270	5%	1/4W
R318	1-249-425-11	CARBON	4.7K	5%	1/4W
R319	1-249-425-11	CARBON	4.7K	5%	1/4W
R320	1-249-437-11	CARBON	47K	5%	1/4W
R321	1-247-885-00	CARBON	180K	5%	1/4W
R322	1-249-414-11	CARBON	560	5%	1/4W
R323	1-249-416-11	CARBON	820	5%	1/4W
R324	1-249-410-11	CARBON	270	5%	1/4W
R325	1-249-421-11	CARBON	2.2K	5%	1/4W
R326	1-249-425-11	CARBON	4.7K	5%	1/4W
R327	1-249-425-11	CARBON	4.7K	5%	1/4W
R401	1-249-389-11	CARBON	4.7	5%	1/4W
R402	1-247-886-11	CARBON	200K	5%	1/4W
R403	1-249-433-11	CARBON	22K	5%	1/4W
R404	1-249-411-11	CARBON	330	5%	1/4W

Ref.No.	Part No.	Description			
R405	1-249-429-11	CARBON	10K	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R407	1-249-417-11	CARBON	1K	5%	1/4W
R408	1-249-417-11	CARBON	1K	5%	1/4W
R409	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-249-429-11	CARBON	10K	5%	1/4W
R412	1-249-429-11	CARBON	10K	5%	1/4W
R413	1-249-429-11	CARBON	10K	5%	1/4W
R414	1-249-429-11	CARBON	10K	5%	1/4W
R415	1-249-429-11	CARBON	10K	5%	1/4W
R416	1-247-903-00	CARBON	1M	5%	1/4W
R417	1-249-423-11	CARBON	3.3K	5%	1/4W
R418	1-249-437-11	CARBON	47K	5%	1/4W
ROD1	1-501-270-00	ANTENNA, TELESCOPIC			
RT101	1-228-996-00	RES. ADJ, CARBON 47K			
RT102	1-228-992-11	RES. ADJ, CARBON 3.3K			
S301	1-554-303-21	SWITCH, KEY BOARD			
S302	1-554-303-21	SWITCH, KEY BOARD			
S303	1-554-303-21	SWITCH, KEY BOARD			
S304	1-554-303-21	SWITCH, KEY BOARD			
S305	1-554-303-21	SWITCH, KEY BOARD			
S306	1-554-303-21	SWITCH, KEY BOARD			
S307	1-554-303-21	SWITCH, KEY BOARD			
S308	1-554-303-21	SWITCH, KEY BOARD			
S309	1-554-303-21	SWITCH, KEY BOARD			
S310	1-554-303-21	SWITCH, KEY BOARD			
S311	1-554-303-21	SWITCH, KEY BOARD			
S312	1-554-303-21	SWITCH, KEY BOARD			
S313	1-570-876-11	SWITCH, KEY BOARD			
S314	1-570-876-11	SWITCH, KEY BOARD			
S315	1-570-876-11	SWITCH, KEY BOARD			
S316	1-570-876-11	SWITCH, KEY BOARD			
S317	1-570-876-11	SWITCH, KEY BOARD			
TB001	1-536-707-00	TERMINAL BOARD, PUSH 2P			
TB002	1-563-199-11	CONNECTOR, PAL			
X201	1-567-250-11	OSCILLATOR, CERAMIC			
X301	1-567-736-11	VIBRATOR, CRYSTAL			
X401	1-527-532-00	OSCILLATOR, CERAMIC			

TC-R707/R707M

SERVICE MANUAL



*US Model
AEP Model*

TC-R707M

*UK Model
E Model*

West German Model

TC-R707

- TC-R707 is the STEREO CASSETTE DECK in FH-707R/909CD/909R.
- TC-R707M is the STEREO CASSETTE DECK in MHC-2000.

SPECIFICATIONS

Recording system 4-track 2-channel stereo

Frequency response

DOLBY NR OFF (DIN)

With TYPE IV cassette (Sony METAL-ES)

40 to 15,000 Hz (± 3 dB)

With TYPE II cassette (Sony UX-S)

40 to 14,000 Hz (± 3 dB)

With TYPE I cassette (Sony HF-X)

40 to 13,000 Hz (± 3 dB)

Wow and flutter 0.1% WRMS (NAB)

$\pm 0.2\%$ (DIN)

General

Dimensions

TC-R707

Approx. 220 \times 120 \times 270 mm (w/h/d)

(8 $\frac{3}{4}$ \times 4 $\frac{3}{4}$ \times 10 $\frac{3}{4}$ inches)


TC-R707M

Approx. 245 \times 120 \times 270 mm (w/h/d)

(9 $\frac{3}{4}$ \times 4 $\frac{3}{4}$ \times 10 $\frac{3}{4}$ inches)

Weight

Approx. 2.5 kg (5 lb 9 oz) net


Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	TCM-170RB8

MODEL IDENTIFICATION

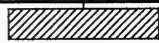


US, AEP, UK, E model

TC-R707
TC-R707M

SONY® MODEL NO. 
STEREO CASSETTE DECK
SERIAL NO.
MADE IN JAPAN

West Germany model

FH-909R
MHC-2000

SONY® MODEL NO. 
STEREO CASSETTE DECK

TC-R707M : STEREO CASSETTE DECK

SERIAL NO.
MADE IN JAPAN

STEREO CASSETTE DECK
SONY®



SEE ADDITIONAL
INFORMATION

SERVICING NOTE

REPAIRING PRECAUTION

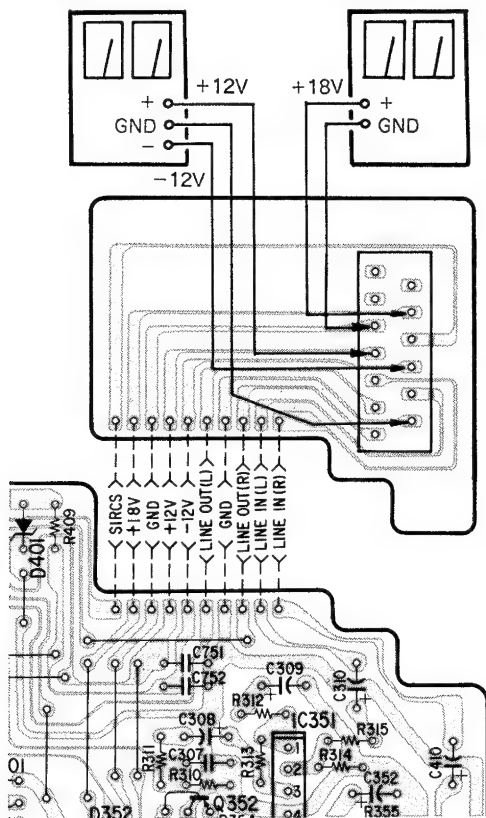
[To apply B+ voltage]

The power of this unit is fed from amplifier.

Because of this, connect the regulated power supply as illustrated below when this unit alone operates.

regulated dc power supply
(1.5–2.0A)

regulated dc power supply
(1.5–2.0A)

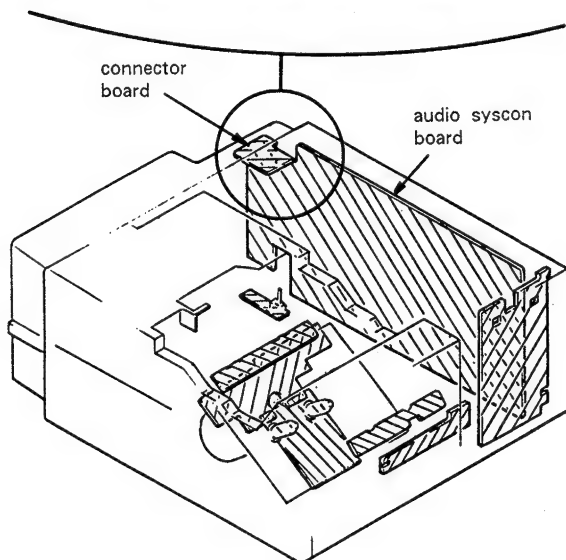
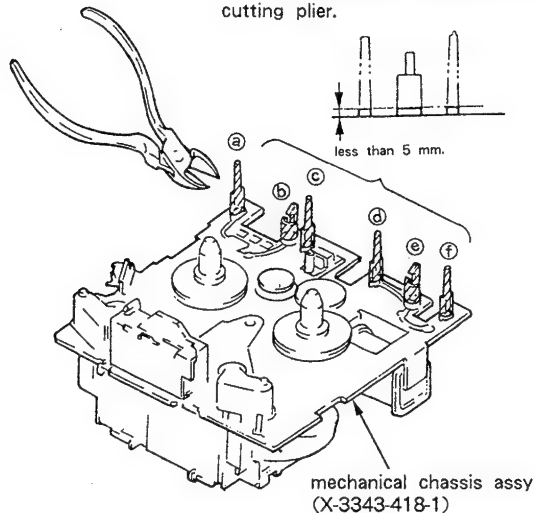


NOTE ON REPLACEMENT OF MECHANISM CHASSIS ASSEMBLY

The mechanism chassis assembly is supplied as shown below with the bosses ① to ⑥ on service.

On replacement please finish as shown in the figure.

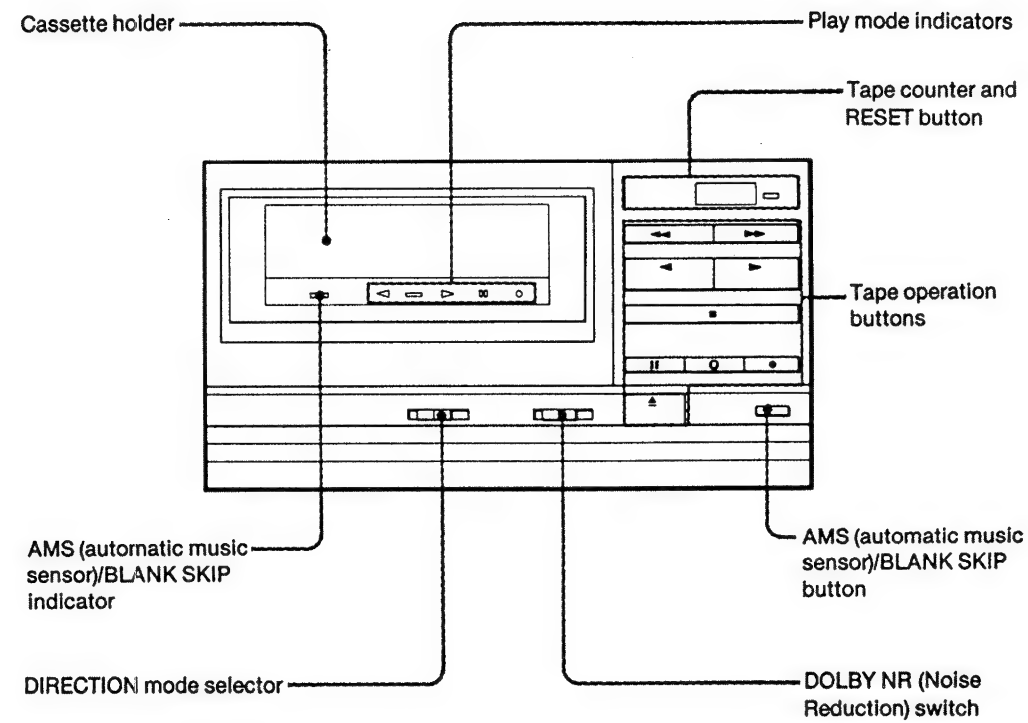
Cut the bosses ① to ⑥ with such as cutting plier.



SECTION 1

GENERAL

1-1. LOCATION OF CONTROLS



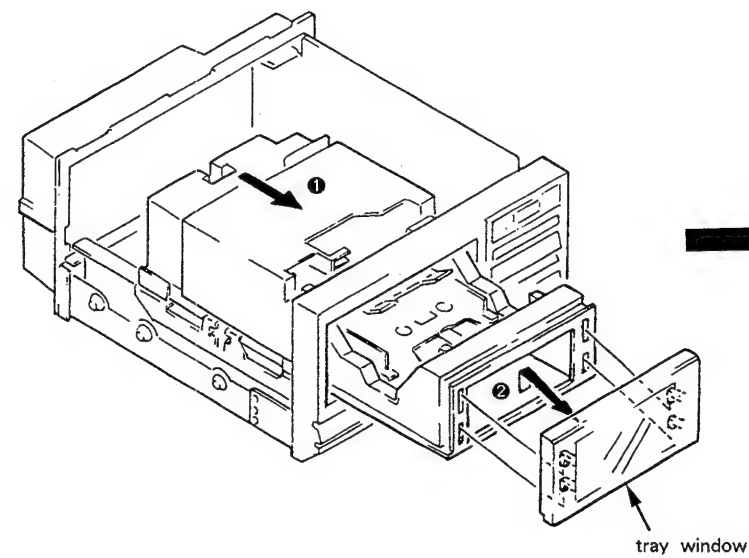
SECTION 2

DISASSEMBLY

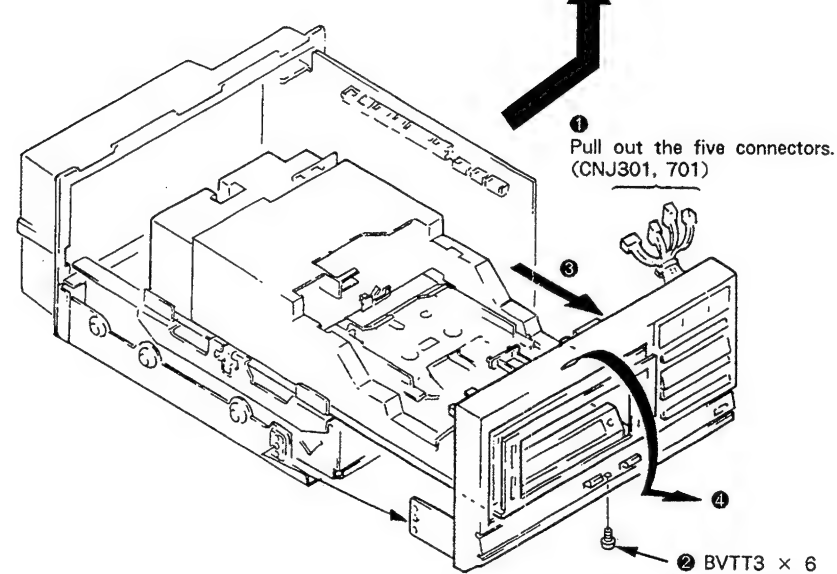
Note : Follow the disassembly procedure in the numerical order given.

2-1. REMOVAL

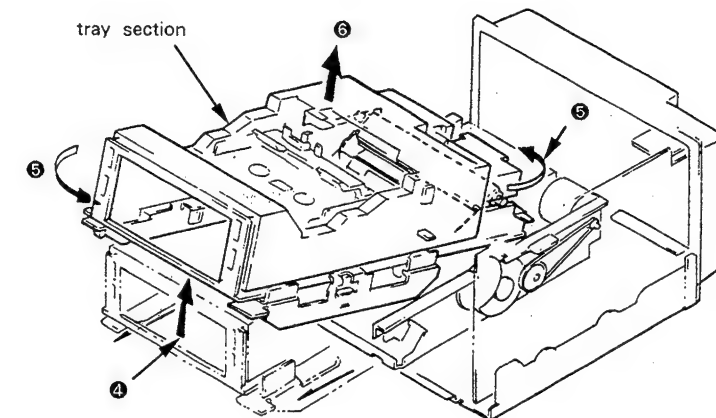
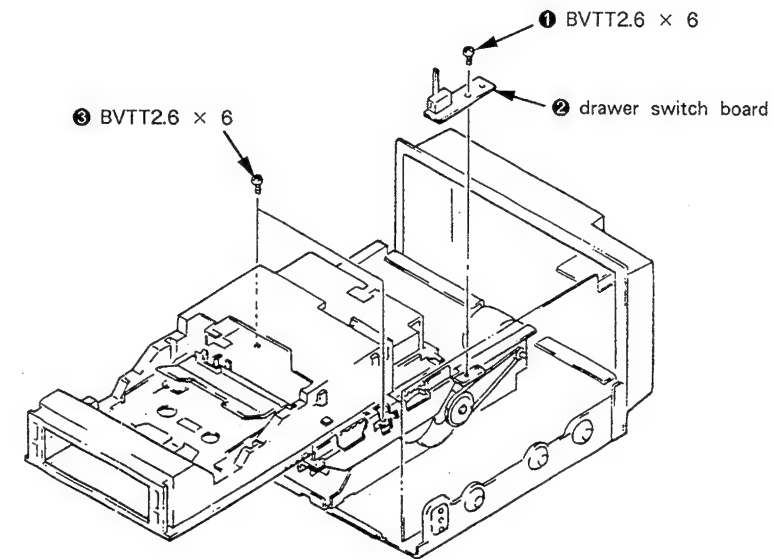
TRAY WINDOW



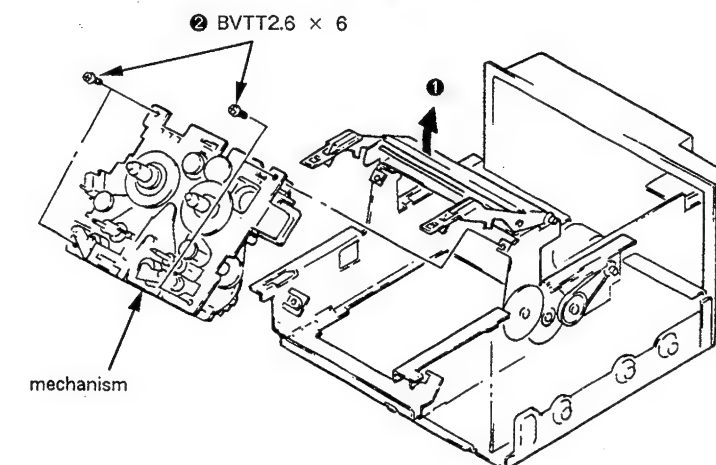
FRONT PANEL



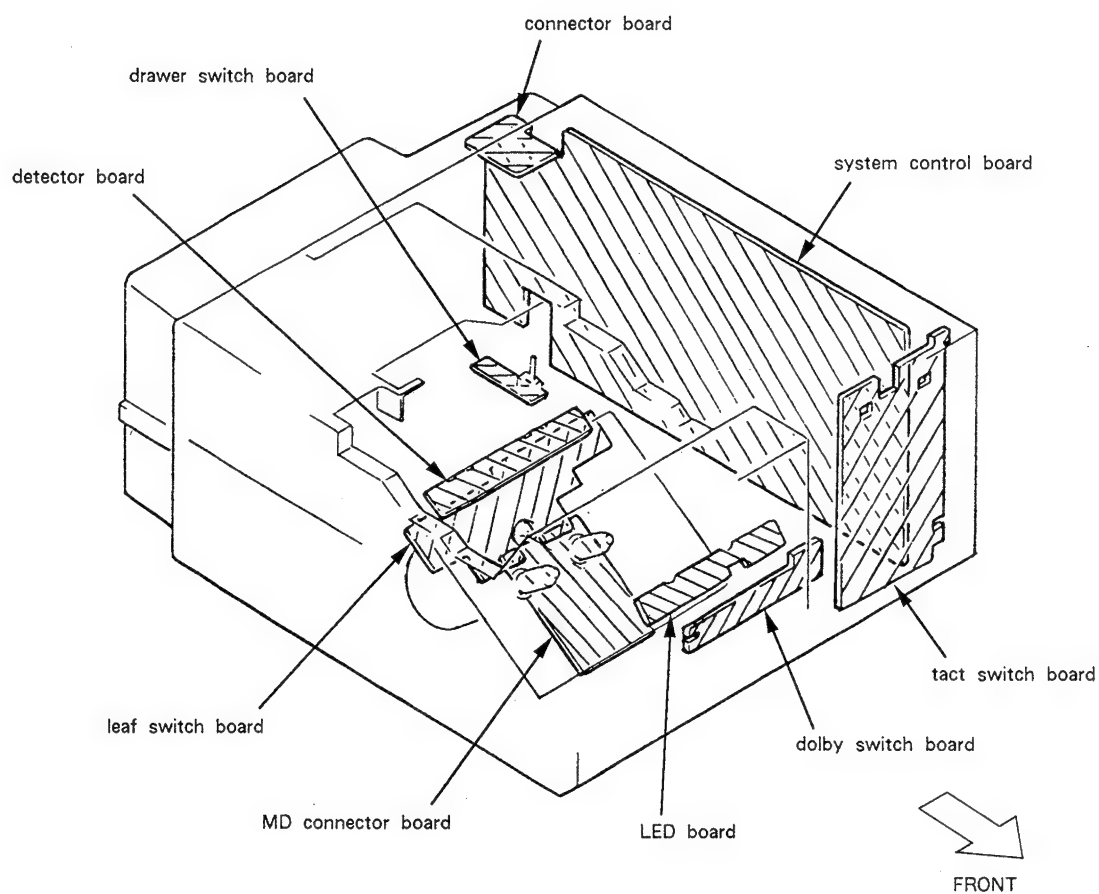
TRAY SECTION



MECHANISM



CIRCUIT BOARDS LOCATION



SECTION 3
DIAGRAMS

3-1. PRINTED WIRING BOARDS

— Conductor Side —

• Semiconductor Lead Layouts

BA3308
μPC4570HA-1

2SB1013
2SD1387

CXA1101P
CXA1198P

2SC634SP
2SC3401
2SC3901

LC6528C-3175

2SD774-3

M5218L

2SK246Y

MB88514B-524N

10E2
US1060M
UZL-7H2
UZL-7L2

BN1A4M

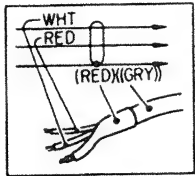
AA2222S
PG2222S
PR2222S

• Semiconductor Location

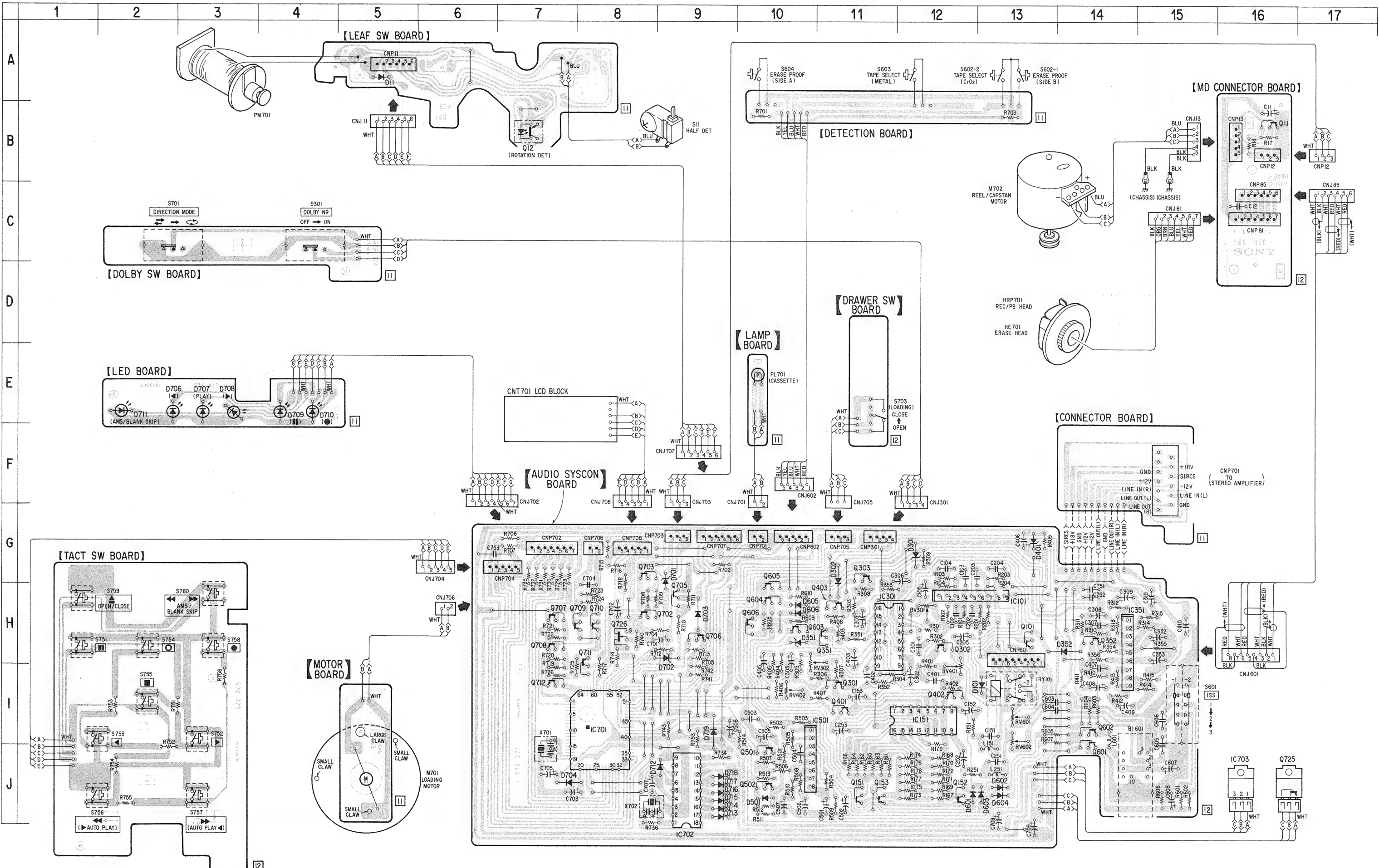
Ref. No.	Location	Ref. No.	Location
D11	A-5	Q11	B-16
D101	I-13	Q12	B-7
D301	G-12	Q101	H-13
D302	G-11	Q151	J-11
D351	H-10	Q152	J-12
D352	H-14	Q153	J-11
D401	G-13	Q301	I-11
D501	J-10	Q302	H-12
D601	J-12	Q303	G-11
D602	J-13	Q351	H-11
D603	J-13	Q352	H-14
D604	J-13	Q401	I-11
D605	H-10	Q402	I-12
D606	H-10	Q403	H-11
D701	G-9	Q501	J-10
D702	H-9	Q502	J-10
D703	H-9	Q601	I-14
D704	J-7	Q602	I-14
D706	E-2	Q603	H-10
D707	E-3	Q604	H-10
D708	E-3	Q605	H-10
D709	E-4	Q606	H-10
D710	E-4	Q702	H-8
D711	E-2	Q703	G-8
D712	J-9	Q705	H-9
D713	J-9	Q706	H-9
D714	J-9	Q707	H-7
D715	J-9	Q708	H-7
D716	J-9	Q709	H-8
D717	J-9	Q710	H-8
D718	J-9	Q711	H-8
D719	I-9	Q712	I-7
		Q725	J-16
		Q726	H-8
IC101	H-13		
IC151	H-12		
IC301	H-11		
IC351	H-14		
IC501	I-10		
IC701	I-8		
IC702	J-9		
IC703	J-16		

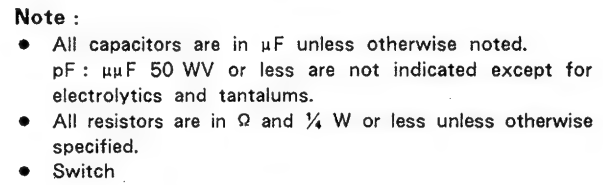
Note

- Color code or sleeving over the end of the jacket.














- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.





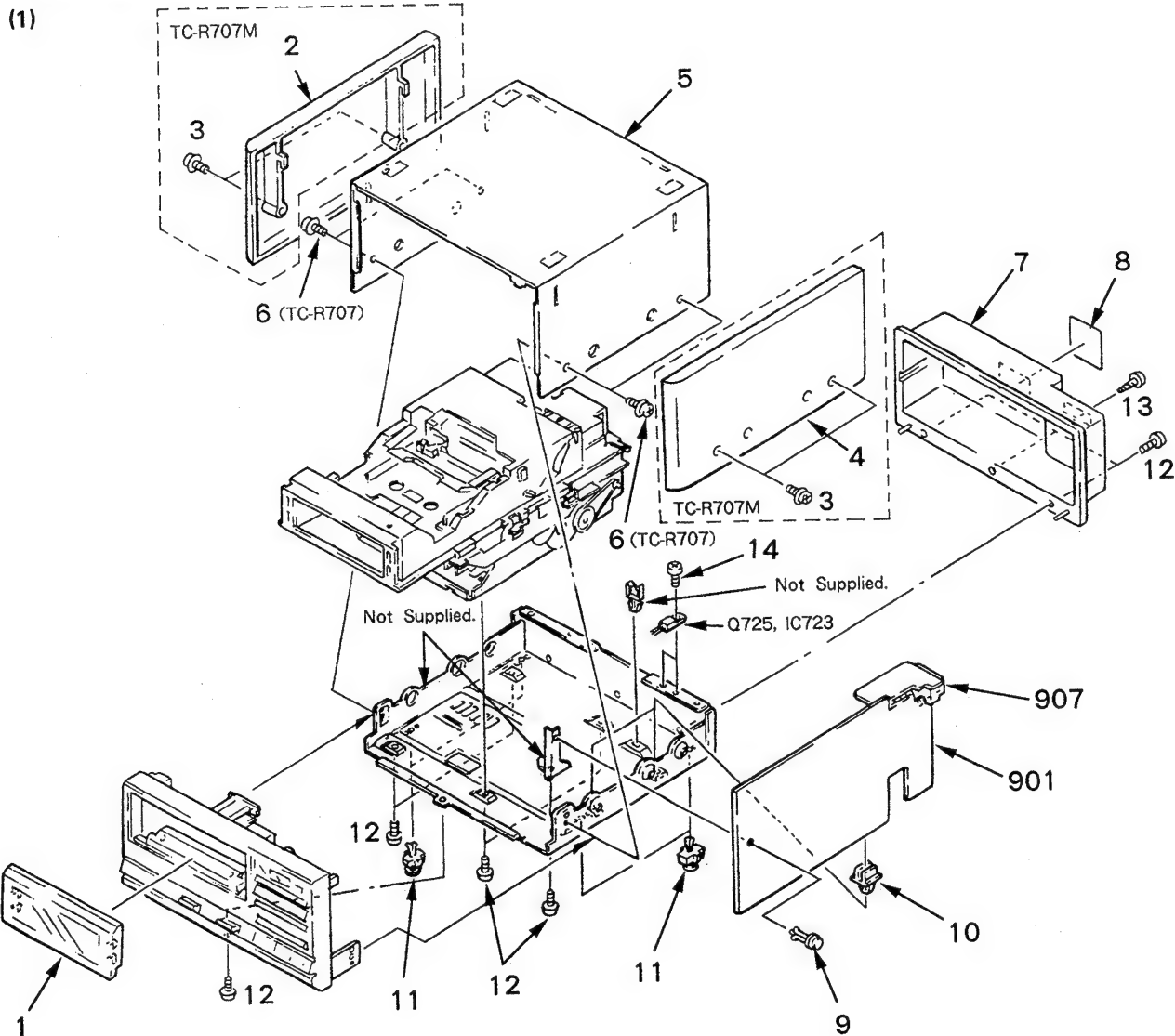
Ref. No.	Switch	Position
S11	HALF DET	OFF
S301	DOLBY NR	OFF
S801	ISS	1
S802-1	ERASE PROOF (SIDE B)	OFF
S802-2	TAPE SELECT (Cr02)	OFF
S803	TAPE SELECT (METAL)	OFF
S804	ERASE PROOF (SIDE A)	OFF
S701	DIRECTION MODE	≡
S703	LOADING	OPEN
S751	⏸ (PAUSE)	OFF
S752	▶ (FWD)	OFF
S753	◀ (REV)	OFF
S754	⦿ (REC MUTE)	OFF
S755	■ (STOP)	OFF
S756	◀◀ (REW)	OFF
S757	▶▶ (FF)	OFF
S758	● (REC)	OFF
S759	OPEN/CLOSE	OFF
S760	AMS/BLANK SKIP	OFF

-  : B+ Line.
-  : B- Line.
-  : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltage and waveforms are dc with respect to ground under no-signal (PLAY mode) conditions.
- no mark :
-  : FWD  : REV  : STOP
-  : FF  : REW  : REC
- Voltage are taken with a VOM (50 kΩ/V).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
 : PB  : REC

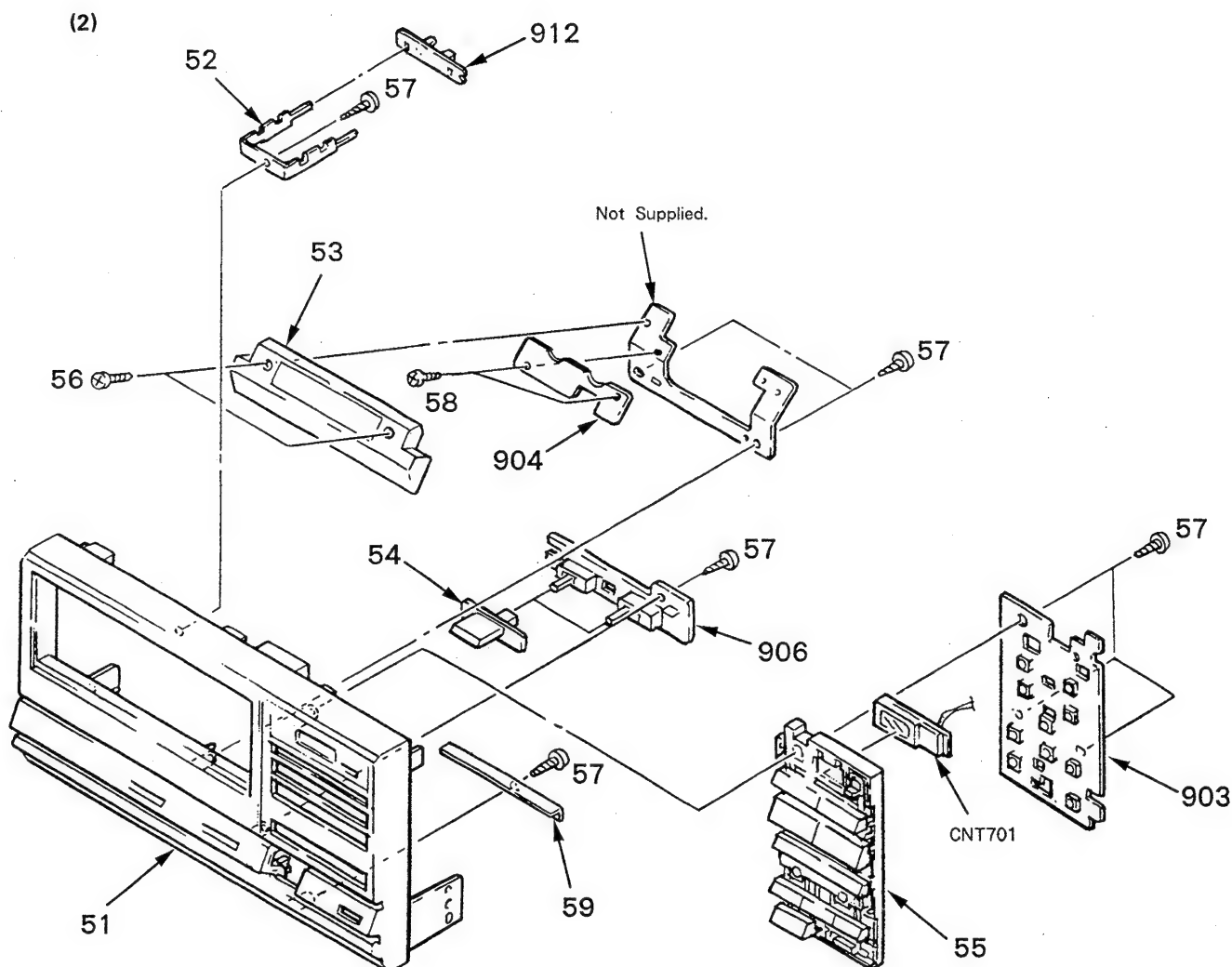
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts Color



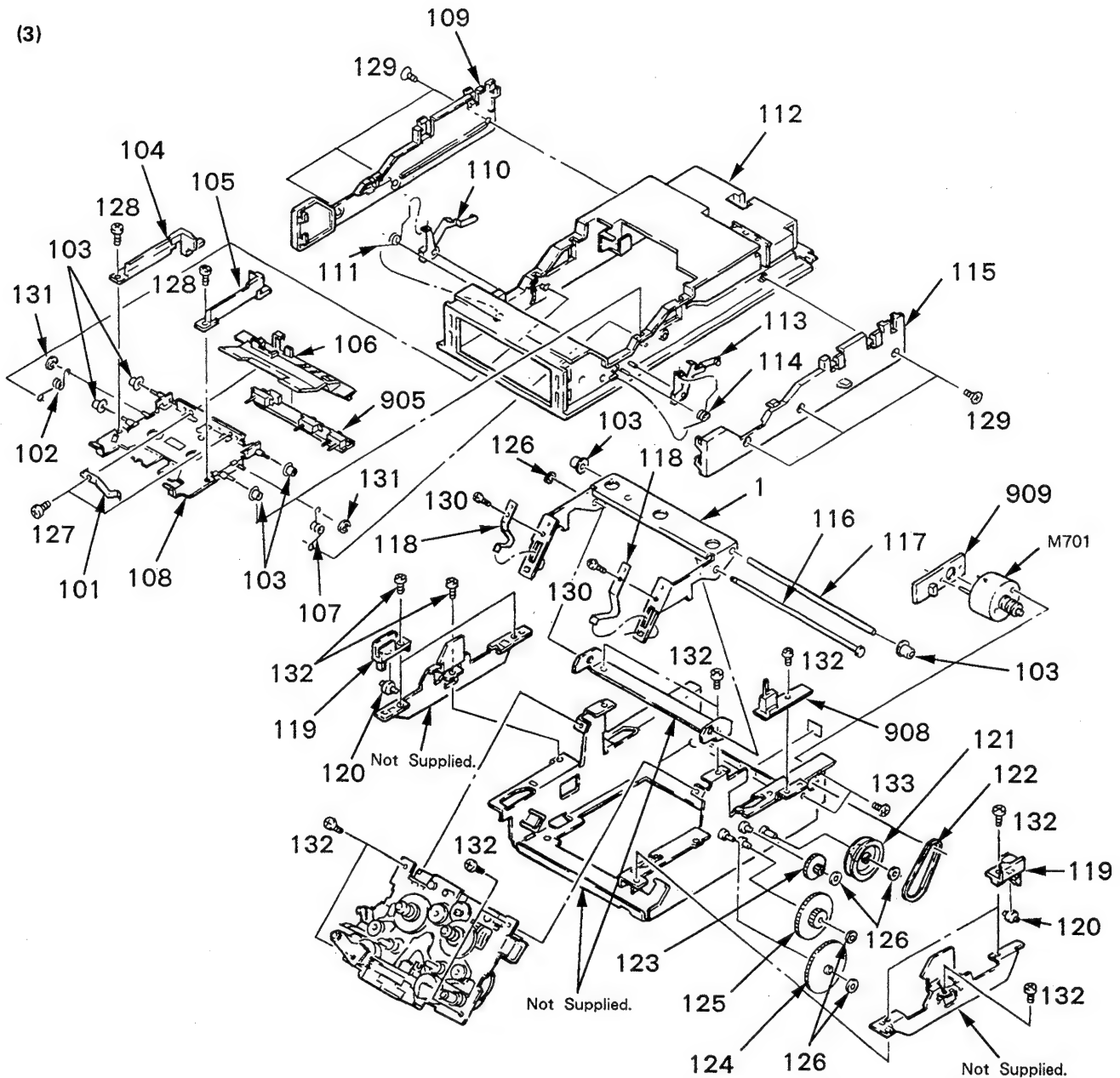
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3332-540-1	WINDOW (TRAY) ASSY		9	3-531-576-11	RIVET	
2	4-925-525-01	(R707M)...PLATE (B-L), SIDE		10	*3-642-310-00	HOLDER, CIRCUIT BOARD	
3	4-886-821-51	(R707M)...SCREW, CASE, (M3X14)		11	X-4902-937-1	FOOT ASSY, RUBBER	
4	4-925-524-01	(R707M)...PLATE (B-R), SIDE		12	7-682-147-01	SCREW +BVTT 3X6 (S)	
5	4-920-118-21	CASE		13	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
6	3-7-4-366-01	(R707)...SCREW (CASE), M3X8		14	7-685-872-01	SCREW +BVTT 3X8	
7	*3-346-251-01	PANEL, BACK		901	*A-2095-632-A	MOUNTED PCB, SYSTEM CONTROL	
8	*3-346-268-01	(R707:UK,E).....LABEL, MODEL NUMBER		907	*1-626-329-11	PC BOARD, CONNECTOR	
	*3-346-269-01	(R707:West Germany)..LABEL, MODEL NUMBER		IC703	8-759-604-29	IC M5F7805	
	*3-346-271-01	(R707M:AEP,US).....LABEL, MODEL NUMBER		Q725	8-729-303-61	TRANSISTOR 2SC3851G	
	*3-346-272-01	(R707M:West Germany) ...LABEL, MODEL NUMBER (AE4)					



No.	Part No.	Description	Remarks
51	X-3332-542-1	(US,UK,AEP,West Germany) ...PANEL ASSY, FRONT (WHITE)	
	X-3332-543-1	(E).....PANEL ASSY, FRONT (GOLD)	
52	*3-346-219-01	BRACKET (LAMP)	
53	X-3332-539-1	COVER ASSY	
54	3-346-246-01	KNOB (DOLBY)	
55	3-346-262-01	(US,UK,AEP,West Germany)...BUTTON (WHITE)	
	3-346-262-11	(E).....BUTTON (GOLD)	

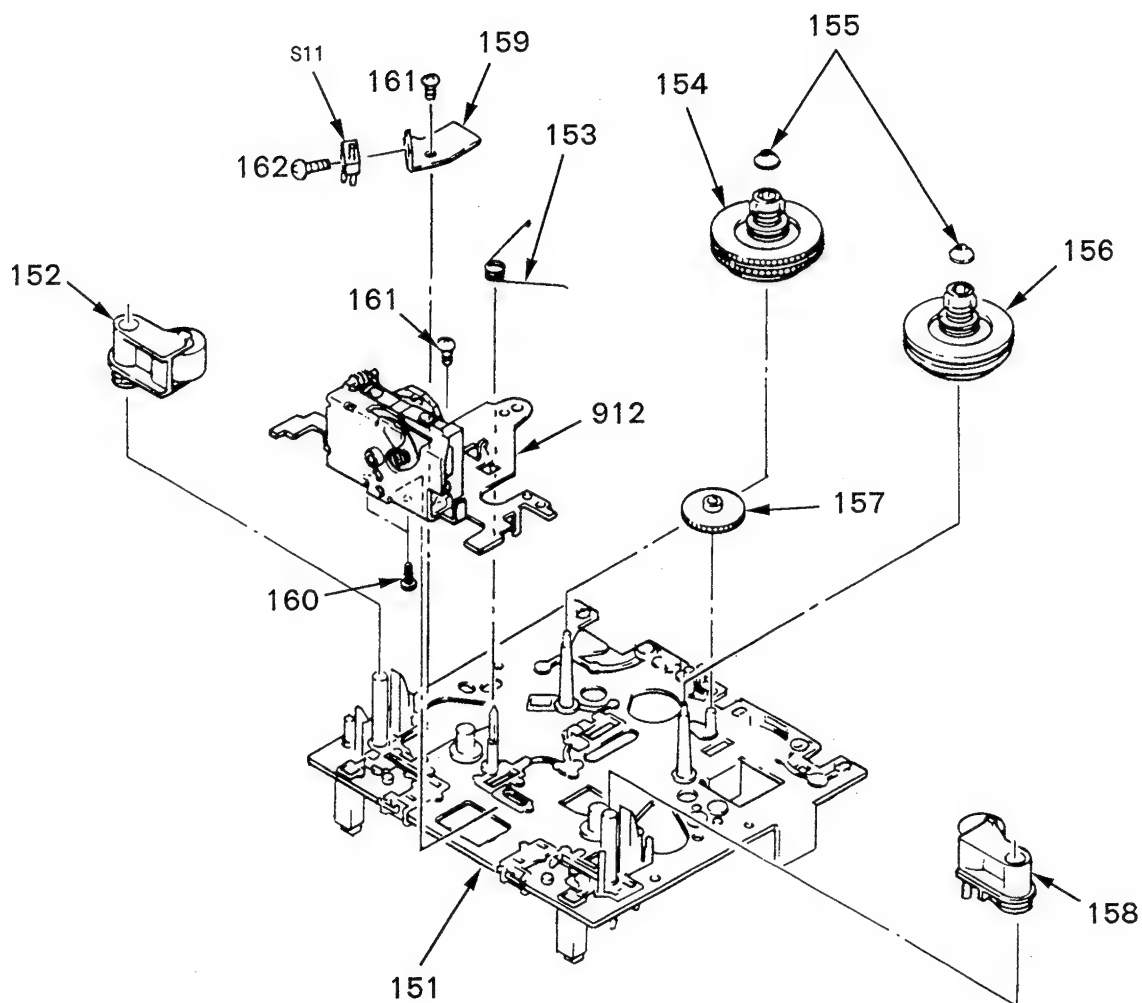
No.	Part No.	Description	Remarks
56	7-621-772-50	SCREW +B 2X10	
57	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
903	*1-626-325-11	PC BOARD, TACT SWITCH	
904	*1-626-326-11	PC BOARD, LED	
906	*1-626-328-11	PC BOARD, DOLBY SWITCH	
912	*1-626-330-11	PC BOARD, LAMP	
CNJ701	1-808-362-11	DISPLAY PANEL, LIQUID CRYSTAL	

(3)

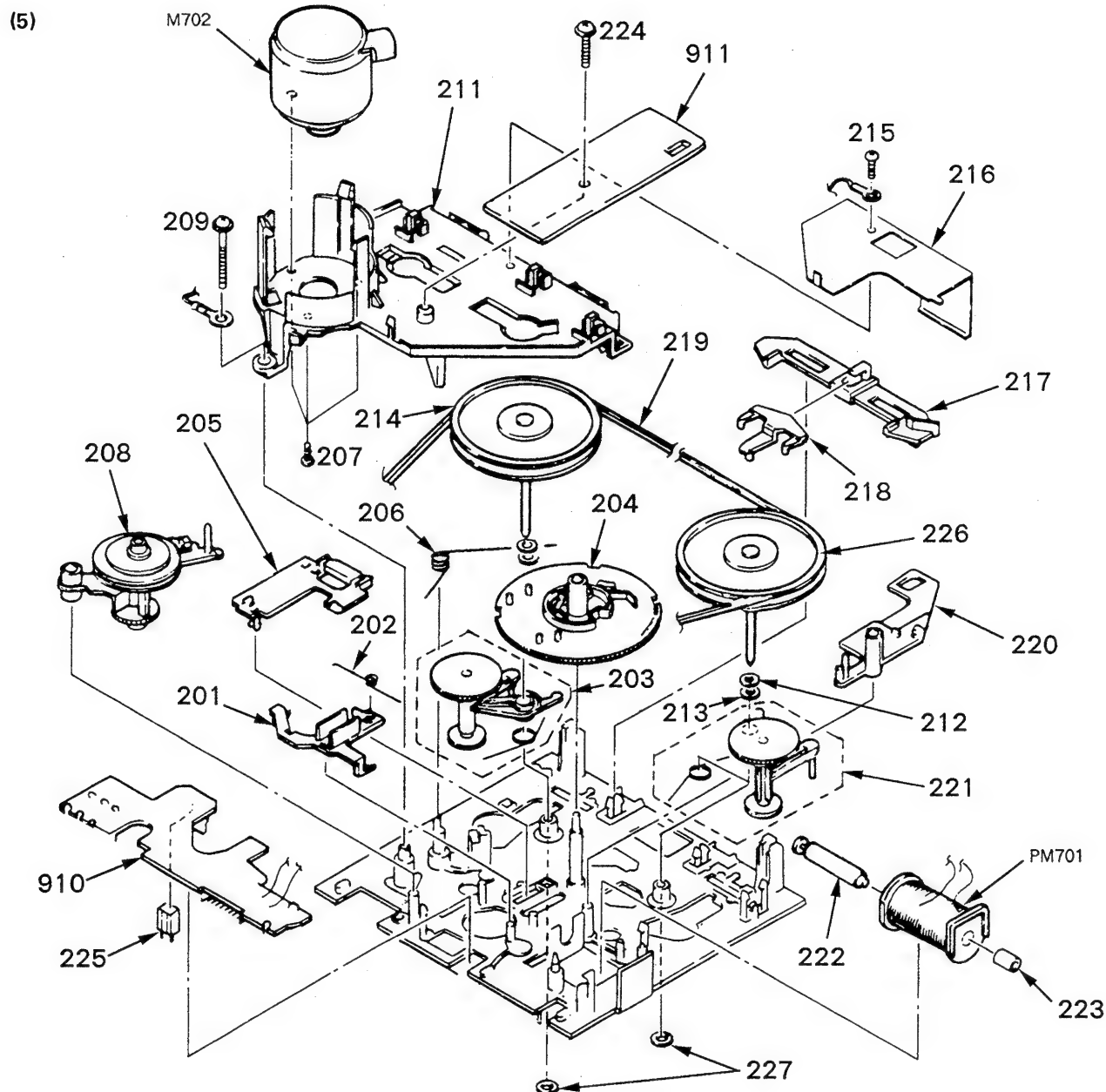


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	3-346-210-01	SPRING (CASSETTE PUSH), LEAF		119	*3-346-244-01	HOLDER (TRAY)	
102	3-346-236-01	SPRING (RETAINER LEFT)		120	*3-346-216-01	ROLLER (GUIDE)	
103	3-346-223-01	ROLLER		121	3-346-213-01	PULLEY (LOADING)	
104	*3-346-227-01	GUIDE (CASSETTE LEFT)		122	3-346-287-01	BELT	
105	*3-346-226-01	GUIDE (CASSETTE RIGHT)		123	3-346-289-01	GEAR (C)	
106	*3-346-250-01	HOLDER (SELECTOR)		124	3-346-215-01	GEAR (B)	
107	3-346-237-01	SPRING (RETAINER RIGHT)		125	3-346-214-01	GEAR (A)	
108	*X-3332-541-1	RETAINER ASSY, CASSETTE		126	3-558-708-21	WASHER, STOPPER	
109	*3-346-256-01	PLATE (LEFT), SIDE		127	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
110	*X-3332-538-1	LEVER (LEFT) ASSY		128	7-627-853-48	PRECISION SCREW +P 2X4 TYPE 3	
111	3-346-234-01	SPRING		129	7-685-233-19	SCREW +KTP 2.6X6 TYPE2NON-SLIT	
112	*3-346-255-01	TRAY (CASSETTE)		130	7-685-860-09	SCREW +BVTT 2.6X4 (S)	
113	*X-3332-537-1	LEVER (RIGHT) ASSY		131	7-624-105-04	STOP RING 2.3, TYPE -E	
114	3-346-235-01	SPRING		132	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
115	*3-346-257-01	PLATE (RIGHT), SIDE		133	7-621-775-08	SCREW +B 2.6X3	
116	*3-346-229-01	SHAFT (FULCRUM)		905	*1-626-327-11	PC BOARD, DETECTION	
117	*3-346-230-01	SHAFT (LEVER)		908	*1-626-331-11	PC BOARD, DRAWER SWITCH	
118	3-346-211-01	SPRING, LEAF		909	*1-626-332-11	PC BOARD, MOTOR	
				M701	X-3332-550-1	MOTOR ASSY (LOADING)	

(4)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-3343-418-1	CHASSIS ASSY, MECHANICAL		158	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
152	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY		159	*3-343-478-01	BRACKET (SW)	
153	3-343-401-01	SPRING, TORSION		160	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2	
155	3-343-439-01	CAP (REEL TABLE)		161	7-621-773-86	SCREW +BVT 2.6X4 (S)	
156	X-3343-401-1	TABEL ASSY, REEL		162	7-621-772-30	SCREW +B 2X6	
157	3-343-411-01	GEAR (FF GEAR)		912	A-2108-123-A	PC BOARD ASSY, HEAD	



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)		218	3-343-462-01	LEVER	
202	3-343-429-01	SPRING, TORSION		219	3-343-426-01	BELT (CAPSTAN BELT SQUARE)	
203	X-3343-406-1	LEVER (TU ARM REV) ASSY		220	*3-343-456-01	LEVER (PM LEVER)	
204	3-343-470-01	GEAR (CAM GEAR)		221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
205	*3-343-461-01	SLIDER		222	*3-343-425-01	ARBOR (MOVABLE IRON ARBOR), IRON	
206	3-343-430-01	SPRING, TORSION		223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
207	7-627-556-28	SCREW +P 2.6X3.5		224	3-343-404-01	SCREW (PTPWH 2X10)	
208	X-3343-414-1	LAVER (FR ARM) ASSY		225	*3-343-419-01	HOLDER (S SENSER A)	
209	3-343-403-01	SCREW (PTTWH 2X18)		226	X-3343-416-1	FLYWHEEL (REV) COMPLETE ASSY	
211	*X-3343-407-1	BASE (THRUST RETAINER) ASSY		227	3-343-473-01	WASHER, NYLON	
212	4-605-835-11	WASHER (2.6), POLYSLIDER		254	X-3343-415-1	TABEL (REV) ASSY, REEL	
213	3-307-482-00	WASHER, LUMILER		258	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
214	X-3343-411-1	FLYWHEEL COMPLETE ASSY		910	*1-624-148-13	PC BOARD, LEAF SW	
215	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2		911	*1-626-217-11	PC BOARD, MD CONNECTOR	
216	*3-343-471-01	PLATE, SHIELD		M702	X-3343-408-1	MOTOR ASSY (REEL/CAPSTAN)	
217	*3-343-457-01	SLIDER (REVERSE SLIDER)		PM701	1-454-456-11	SOLENOID, PLUNGER	

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA...,UPC...: μ PC, UPD...: μ PD...

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
901	*A-2095-632-A	MOUNTED PCB, SYSTEM CONTROL					C405	1-124-464-11	ELECT	0.22MF	20%	50V	
902	A-2108-123-A	PC BOARD ASSY, HEAD					C406	1-124-477-11	ELECT	47MF	20%	16V	
903	*1-626-325-11	PC BOARD, TACT SWITCH					C407	1-161-379-00	CERAMIC	0.01MF	30%	16V	
904	*1-626-326-11	PC BOARD, LED					C408	1-124-927-11	ELECT	4.7MF	20%	50V	
905	*1-626-327-11	PC BOARD, DETECTION					C409	1-124-443-00	ELECT	100MF	20%	6.3V	
906	*1-626-328-11	PC BOARD, DOLBY SWITCH					C410	1-124-927-11	ELECT	4.7MF	20%	50V	
907	*1-626-329-11	PC BOARD, CONNECTOR					C501	1-124-477-11	ELECT	47MF	20%	16V	
908	*1-626-331-11	PC BOARD, DRAWER SWITCH					C502	1-124-902-00	ELECT	0.47MF	20%	50V	
909	*1-626-332-11	PC BOARD, MOTOR					C503	1-136-161-00	FILM	0.047MF	5%	50V	
910	*1-624-148-13	PC BOARD, LEAF SW					C504	1-161-379-00	CERAMIC	0.01MF	30%	16V	
911	*1-626-217-11	PC BOARD, MD CONNECTOR					C505	1-124-477-11	ELECT	47MF	20%	16V	
912	A-2108-123-A	PC BOARD ASSY, HEAD					C506	1-124-925-11	ELECT	2.2MF	20%	50V	
912	*1-626-330-11	PC BOARD, LAMP					C507	1-124-925-11	ELECT	2.2MF	20%	50V	
BI601	1-464-934-11	OSCILLATION UNIT, BIAS					C508	1-124-925-11	ELECT	2.2MF	20%	50V	
C11	1-126-101-11	ELECT	100MF	20%	16V		C603	1-162-286-31	CERAMIC	220PF	10%	50V	
C12	1-161-379-00	CERAMIC	0.01MF	30%	16V		C604	1-162-286-31	CERAMIC	220PF	10%	50V	
C102	1-162-293-31	CERAMIC	820PF	10%	50V		C605	1-106-349-00	MYLAR	0.0018MF	10%	100V	
C103	1-162-282-31	CERAMIC	100PF	10%	50V		C606	1-106-349-00	MYLAR	0.0018MF	10%	100V	
C104	1-136-157-00	FILM	0.022MF	5%	50V		C607	1-123-875-11	ELECT	10MF	20%	50V	
C105	1-124-927-11	ELECT	4.7MF	20%	50V		C608	1-124-499-11	ELECT	1MF	20%	50V	
C151	1-162-282-31	CERAMIC	100PF	10%	50V		C701	1-124-927-11	ELECT	4.7MF	20%	50V	
C152	1-124-927-11	ELECT	4.7MF	20%	50V		C702	1-124-927-11	ELECT	4.7MF	20%	50V	
C153	1-124-927-11	ELECT	4.7MF	20%	50V		C703	1-123-382-00	ELECT	3.3MF	20%	50V	
C202	1-162-293-31	CERAMIC	820PF	10%	50V		C704	1-124-282-00	ELECT	22MF	20%	25V	
C203	1-162-282-31	CERAMIC	100PF	10%	50V		C705	1-123-875-11	ELECT	10MF	20%	50V	
C204	1-136-157-00	FILM	0.022MF	5%	50V		C707	1-124-499-11	ELECT	1MF	20%	50V	
C205	1-124-927-11	ELECT	4.7MF	20%	50V		C708	1-124-477-11	ELECT	47MF	20%	16V	
C251	1-162-282-31	CERAMIC	100PF	10%	50V		C709	1-124-477-11	ELECT	47MF	20%	16V	
C252	1-124-927-11	ELECT	4.7MF	20%	50V		C751	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C253	1-124-927-11	ELECT	4.7MF	20%	50V		C752	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C301	1-130-479-00	MYLAR	0.0047MF	5%	50V		C753	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C302	1-131-346-00	TANTALUM	0.68MF	10%	35V		CNJ701	1-808-362-11	DISPLAY PANEL, LIQUID CRYSTAL				
C303	1-124-927-11	ELECT	4.7MF	20%	50V		CNP11	*1-564-499-11	PIN, CONNECTOR 6P				
C305	1-124-464-11	ELECT	0.22MF	20%	50V		CNP12	*1-564-337-00	PIN, CONNECTOR 3P				
C306	1-124-477-11	ELECT	47MF	20%	16V		CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P				
C307	1-161-379-00	CERAMIC	0.01MF	30%	16V		CNP18	*1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P				
C308	1-124-927-11	ELECT	4.7MF	20%	50V		CNP81	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P				
C309	1-124-443-00	ELECT	100MF	20%	6.3V		CNP85	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P				
C310	1-124-927-11	ELECT	4.7MF	20%	50V		CNP301	*1-564-338-00	PIN, CONNECTOR 4P				
C352	1-123-875-11	ELECT	10MF	20%	50V		CNP601	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P				
C353	1-124-477-11	ELECT	47MF	20%	16V		CNP602	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P				
C401	1-130-479-00	MYLAR	0.0047MF	5%	50V		CNP701	*1-564-336-00	PIN, CONNECTOR 2P				
C402	1-131-346-00	TANTALUM	0.68MF	10%	35V		CNP702	*1-564-341-11	PIN, CONNECTOR 7P				
C403	1-124-927-11	ELECT	4.7MF	20%	50V		CNP703	*1-564-337-00	PIN, CONNECTOR 3P				

Ref.No.	Part No.	Description
	CNP704*1-564-339-00	PIN, CONNECTOR 5P
	CNP705*1-564-337-71	PIN, CONNECTOR 3P
	CNP706*1-564-336-71	PIN, CONNECTOR 2P
	CNP707*1-564-340-00	PIN, CONNECTOR 6P
	CNP708*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
	CNP709 1-564-610-21	CONNECTOR, BOARD TO BOARD
	CNP710*1-565-291-11	SOCKET, CONNECTOR 13P
D11	8-719-000-26	DIODE US1060M
D101	8-719-000-26	DIODE US1060M
D301	8-719-000-76	DIODE UZL-7L2
D302	8-719-000-26	DIODE US1060M
D351	8-719-000-96	DIODE UZL-7H2
D352	8-719-000-26	DIODE US1060M
D401	8-719-000-78	DIODE UZL-7L2
D501	8-719-000-26	DIODE US1060M
D601	8-719-000-26	DIODE US1060M
D602	8-719-000-26	DIODE US1060M
D603	8-719-000-26	DIODE US1060M
D604	8-719-000-26	DIODE US1060M
D605	8-719-000-26	DIODE US1060M
D606	8-719-000-26	DIODE US1060M
D701	8-719-000-96	DIODE UZL-7H2
D702	8-719-000-96	DIODE UZL-7H2
D703	8-719-200-77	DIODE 10E2N
D704	8-719-000-26	DIODE US1060M
D706	8-719-922-23	DIODE PG2222SX
D707	8-719-922-23	DIODE PG2222SX
D708	8-719-922-23	DIODE PG2222SX
D709	8-719-907-53	DIODE AA2222S
D710	8-719-922-21	DIODE PR2222S
D711	8-719-922-23	DIODE PG2222SX
D712	8-719-000-26	DIODE US1060M
D713	8-719-000-26	DIODE US1060M
D714	8-719-000-26	DIODE US1060M
D715	8-719-000-26	DIODE US1060M
D716	8-719-000-26	DIODE US1060M
D717	8-719-000-26	DIODE US1060M
D718	8-719-000-26	DIODE US1060M
D719	8-719-000-26	DIODE US1060M
IC101	8-759-112-93	IC UPC4570HA-1
IC151	8-752-032-60	IC CXA1198P
IC301	8-752-031-83	IC CXA1101P
IC351	8-759-939-73	IC BA3308
IC501	8-759-600-02	IC M5218L
IC701	8-759-972-68	IC MB885148-524N
IC702	8-759-803-33	IC LC6528C-3175
IC703	8-759-604-29	IC M5F7805

Ref.No.	Part No.	Description
L151	1-410-779-21	INDUCTOR 22MMH
L251	1-410-779-21	INDUCTOR 22MMH
L601	1-408-425-00	INDUCTOR 220UH
M701	X-3332-550-1	MOTOR ASSY (LOADING)
M702	X-3343-408-1	MOTOR ASSY (REEL/CAPSTAN)
PL701	1-518-633-11	LAMP, PILOT
PM701	1-454-456-11	SOLENOID, PLUNGER
Q11	8-729-117-54	TRANSISTOR 2SA1175
Q12	8-719-939-23	TRANSISTOR GP2S09-C
Q101	8-729-806-28	TRANSISTOR 2SC3402
Q151	8-729-806-26	TRANSISTOR 2SC3901
Q152	8-729-806-26	TRANSISTOR 2SC3901
Q153	8-729-806-26	TRANSISTOR 2SC3901
Q301	8-729-806-26	TRANSISTOR 2SC3901
Q302	8-729-806-26	TRANSISTOR 2SC3901
Q303	8-729-806-26	TRANSISTOR 2SC3901
Q351	8-729-806-28	TRANSISTOR 2SC3402
Q352	8-729-115-15	TRANSISTOR BN1A4M
Q401	8-729-806-26	TRANSISTOR 2SC3901
Q402	8-729-806-26	TRANSISTOR 2SC3901
Q403	8-729-806-26	TRANSISTOR 2SC3901
Q501	8-729-806-28	TRANSISTOR 2SC3402
Q502	8-729-600-27	TRANSISTOR 2SC634SP
Q601	8-729-806-26	TRANSISTOR 2SC3402
Q602	8-729-801-93	TRANSISTOR 2SD1387
Q603	8-729-600-27	TRANSISTOR 2SC634SP
Q604	8-729-115-15	TRANSISTOR BN1A4M
Q605	8-729-806-28	TRANSISTOR 2SC3402
Q606	8-729-115-15	TRANSISTOR BN1A4M
Q702	8-729-806-28	TRANSISTOR 2SC3402
Q703	8-729-801-83	TRANSISTOR 2SB1013
Q705	8-729-801-83	TRANSISTOR 2SB1013
Q706	8-729-801-83	TRANSISTOR 2SB1013
Q707	8-729-801-93	TRANSISTOR 2SD1387
Q708	8-729-801-93	TRANSISTOR 2SD1387
Q709	8-729-801-83	TRANSISTOR 2SB1013
Q710	8-729-801-83	TRANSISTOR 2SB1013
Q711	8-729-177-42	TRANSISTOR 2SD774-3
Q712	8-729-806-26	TRANSISTOR 2SC3402
Q725	8-729-303-61	TRANSISTOR 2SC3851G
Q726	8-729-224-61	TRANSISTOR 2SK246Y
R14	1-249-408-11	CARBON 180 5% 1/4W
R17	1-249-437-11	CARBON 47K 5% 1/4W
R18	1-249-437-11	CARBON 47K 5% 1/4W

Ref.No.	Part No.	Description
---------	----------	-------------

R101	1-249-441-11	CARBON	100K	5%	1/4W
R102	1-249-405-11	CARBON	100	5%	1/4W
R103	1-249-426-11	CARBON	5.6K	5%	1/4W
R104	1-215-472-00	CARBON	130K	5%	1/4W
R151	1-249-430-11	CARBON	12K	5%	1/4W
R161	1-249-441-11	CARBON	100K	5%	1/4W
R162	1-249-440-11	CARBON	82K	5%	1/4W
R163	1-249-439-11	CARBON	68K	5%	1/4W
R164	1-249-436-11	CARBON	39K	5%	1/4W
R165	1-249-438-11	CARBON	56K	5%	1/4W
R166	1-249-464-00	CARBON	75K	5%	1/4W
R167	1-249-441-11	CARBON	100K	5%	1/4W
R168	1-249-878-00	CARBON	200K	5%	1/4W
R169	1-215-462-00	CARBON	51K	5%	1/4W
R170	1-249-437-11	CARBON	47K	5%	1/4W
R171	1-249-438-11	CARBON	56K	5%	1/4W
R172	1-249-440-11	CARBON	82K	5%	1/4W
R173	1-215-472-00	CARBON	130K	5%	1/4W
R174	1-249-437-11	CARBON	62K	5%	1/4W
R175	1-249-441-11	CARBON	100K	5%	1/4W
R176	1-249-435-11	CARBON	33K	5%	1/4W
R177	1-249-438-11	CARBON	56K	5%	1/4W
R178	1-215-460-00	CARBON	43K	5%	1/4W
R179	1-215-454-00	CARBON	24K	5%	1/4W
R201	1-249-441-11	CARBON	100K	5%	1/4W
R202	1-249-405-11	CARBON	100	5%	1/4W
R203	1-249-426-11	CARBON	5.6K	5%	1/4W
R204	1-215-472-00	CARBON	130K	5%	1/4W
R251	1-249-430-11	CARBON	12K	5%	1/4W
R301	1-249-430-11	CARBON	12K	5%	1/4W
R302	1-249-430-11	CARBON	12K	5%	1/4W
R303	1-249-425-11	CARBON	4.7K	5%	1/4W
R304	1-249-425-11	CARBON	4.7K	5%	1/4W
R305	1-249-428-11	CARBON	8.2K	5%	1/4W
R306	1-249-421-11	CARBON	2.2K	5%	1/4W
R307	1-249-429-11	CARBON	10K	5%	1/4W
R308	1-249-427-11	CARBON	6.8K	5%	1/4W
R309	1-249-408-11	CARBON	180	5%	1/4W
R310	1-249-414-11	CARBON	560	5%	1/4W
R311	1-249-430-11	CARBON	12K	5%	1/4W
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-249-437-11	CARBON	47K	5%	1/4W
R314	1-249-417-11	CARBON	1K	5%	1/4W
R315	1-249-437-11	CARBON	47K	5%	1/4W
R351	1-215-460-00	CARBON	43K	5%	1/4W

Ref.No.	Part No.	Description
---------	----------	-------------

R352	1-249-441-11	CARBON	100K	5%	1/4W
R353	1-249-441-11	CARBON	100K	5%	1/4W
R354	1-249-405-11	CARBON	100	5%	1/4W
R355	1-210-825-00	SOLID	3.3M	5%	1/4W
R356	1-249-413-11	CARBON	470	5%	1/4W
R401	1-249-430-11	CARBON	12K	5%	1/4W
R402	1-249-430-11	CARBON	12K	5%	1/4W
R403	1-249-425-11	CARBON	4.7K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-428-11	CARBON	8.2K	5%	1/4W
R406	1-249-421-11	CARBON	2.2K	5%	1/4W
R407	1-249-429-11	CARBON	10K	5%	1/4W
R408	1-249-427-11	CARBON	6.8K	5%	1/4W
R409	1-249-408-11	CARBON	180	5%	1/4W
R410	1-249-414-11	CARBON	560	5%	1/4W
R411	1-249-430-11	CARBON	12K	5%	1/4W
R412	1-249-417-11	CARBON	1K	5%	1/4W
R413	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-249-417-11	CARBON	1K	5%	1/4W
R415	1-249-437-11	CARBON	47K	5%	1/4W
R501	1-247-881-00	CARBON	120K	5%	1/4W
R502	1-249-429-11	CARBON	10K	5%	1/4W
R503	1-249-441-11	CARBON	100K	5%	1/4W
R504	1-249-413-11	CARBON	470	5%	1/4W
R505	1-249-428-11	CARBON	8.2K	5%	1/4W
R506	1-249-425-11	CARBON	4.7K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-413-11	CARBON	470	5%	1/4W
R510	1-249-441-11	CARBON	100K	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-249-441-11	CARBON	100K	5%	1/4W
R513	1-249-417-11	CARBON	1K	5%	1/4W
R514	1-249-439-11	CARBON	68K	5%	1/4W
R601	1-249-432-11	CARBON	18K	5%	1/4W
R602	1-249-436-11	CARBON	39K	5%	1/4W
R603	1-249-397-11	CARBON	22	5%	1/4W
R604	1-249-429-11	CARBON	10K	5%	1/4W
R605	1-249-428-11	CARBON	8.2K	5%	1/4W
R606	1-215-448-00	CARBON	13K	5%	1/4W
R607	1-249-417-11	CARBON	1K	5%	1/4W
R608	1-249-417-11	CARBON	1K	5%	1/4W
R609	1-249-417-11	CARBON	1K	5%	1/4W
R610	1-249-417-11	CARBON	1K	5%	1/4W
R701	1-215-432-00	CARBON	3K	5%	1/4W

Ref.No.	Part No.	Description			
R702	1-215-440-00	CARBON	6.2K	5%	1/4W
R703	1-249-418-11	CARBON	1.2K	5%	1/4W
R704	1-249-437-11	CARBON	47K	5%	1/4W
R705	1-249-425-11	CARBON	4.7K	5%	1/4W
R706	1-249-425-11	CARBON	4.7K	5%	1/4W
R707	1-249-425-11	CARBON	4.7K	5%	1/4W
R708	1-249-417-11	CARBON	1K	5%	1/4W
R709	1-249-425-11	CARBON	4.7K	5%	1/4W
R710	1-249-417-11	CARBON	390	5%	1/4W
R711	1-249-425-11	CARBON	4.7K	5%	1/4W
R712	1-249-417-11	CARBON	1K	5%	1/4W
R713	1-249-425-11	CARBON	4.7K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-249-424-11	CARBON	3.9K	5%	1/4W
R716	1-249-427-11	CARBON	6.8K	5%	1/4W
R717	1-249-424-11	CARBON	3.9K	5%	1/4W
R718	1-249-427-11	CARBON	6.8K	5%	1/4W
R719	1-249-437-11	CARBON	47K	5%	1/4W
R720	1-249-425-11	CARBON	4.7K	5%	1/4W
R721	1-249-425-11	CARBON	4.7K	5%	1/4W
R722	1-249-437-11	CARBON	47K	5%	1/4W
R723	1-249-417-11	CARBON	1K	5%	1/4W
R724	1-249-417-11	CARBON	1K	5%	1/4W
R725	1-249-417-11	CARBON	1K	5%	1/4W
R726	1-249-424-11	CARBON	3.9K	5%	1/4W
R728	1-249-410-11	CARBON	270	5%	1/4W
R729	1-249-410-11	CARBON	270	5%	1/4W
R730	1-249-410-11	CARBON	270	5%	1/4W
R731	1-249-410-11	CARBON	270	5%	1/4W
R732	1-249-413-11	CARBON	470	5%	1/4W
R733	1-249-410-11	CARBON	270	5%	1/4W
R734	1-249-429-11	CARBON	10K	5%	1/4W
R735	1-249-417-11	CARBON	1K	5%	1/4W
R736	1-247-903-00	CARBON	1M	5%	1/4W
R740	1-247-903-00	CARBON	1M	5%	1/4W
R741	1-249-437-11	CARBON	47K	5%	1/4W
R742	1-249-437-11	CARBON	47K	5%	1/4W
R743	1-249-437-11	CARBON	47K	5%	1/4W
R751	1-249-422-11	CARBON	2.7K	5%	1/4W
R752	1-249-424-11	CARBON	3.9K	5%	1/4W
R753	1-249-428-11	CARBON	8.2K	5%	1/4W
R754	1-249-422-11	CARBON	2.7K	5%	1/4W
R755	1-249-424-11	CARBON	3.9K	5%	1/4W
R756	1-249-428-11	CARBON	8.2K	5%	1/4W

Ref.No.	Part No.	Description
RV301	1-228-994-00	RES, ADJ, CARBON 10K
RV302	1-228-994-00	RES, ADJ, CARBON 10K
RV401	1-228-994-00	RES, ADJ, CARBON 10K
RV402	1-228-994-00	RES, ADJ, CARBON 10K
RV601	1-228-997-00	RES, ADJ, CARBON 100K
RV602	1-228-997-00	RES, ADJ, CARBON 100K
RY101	1-515-614-11	RELAY
S11	1-570-771-11	SWITCH (HALF DET)
S301	1-570-157-21	SWITCH, SLIDE (DOLBY NR)
S601	1-554-798-31	SWITCH, SLIDE (ISS)
S602	1-571-486-11	SWITCH, MICRO (ERASE PROOF/TAPE SELECT)
S603	*1-571-487-11	SWITCH, MICRO (TAPE SELECT)
S604	*1-571-487-11	SWITCH, MICRO (ERASE PROOF)
S701	1-570-157-21	SWITCH, SLIDE (DIRECTION MODE)
S703	1-571-300-11	SWITCH, ROTARY (LOADING)
S751	1-553-856-00	SWITCH, KEY BOARD (PAUSE)
S752	1-553-856-00	SWITCH, KEY BOARD (FWD)
S753	1-553-856-00	SWITCH, KEY BOARD (REV)
S754	1-553-856-00	SWITCH, KEY BOARD (REC MUTE)
S755	1-553-856-00	SWITCH, KEY BOARD (STOP)
S756	1-553-856-00	SWITCH, KEY BOARD (REW)
S757	1-553-856-00	SWITCH, KEY BOARD (FF)
S758	1-553-856-00	SWITCH, KEY BOARD (REC)
S759	1-553-856-00	SWITCH, KEY BOARD (OPEN/CLOSE)
S760	1-553-856-00	SWITCH, KEY BOARD (AMS)
X701	1-567-771-11	VIBRATOR, CERAMIC
X702	1-567-772-11	VIBRATOR, CERAMIC

TC-R707/R707M

SONY[®] SERVICE MANUAL

US Model
AEP Model
TC-R707M

UK Model
E Model

West Germany Model
TC-R707

SUPPLEMENT-1

File this supplement with the service manual.

1-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
record/playback/erase head rubber belts
capstan
pinch roller
idlers
2. Demagnetize the head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torqu meter	Meter reading
FWD	CQ-102C	30 to 60 g·cm (0.42 to 0.83 oz·inch)
FWD Back tension	CQ-102C	1 to 5 g·cm (0.01 to 0.07 oz·inch)
FF, REW	CQ-201B	100 to 170 g·cm (1.39 to 2.36 oz·inch)

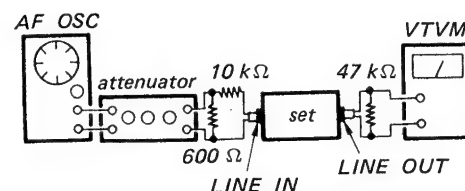
1-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.

The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
DOLBY NR switch: OFF
ISS switch: 2
- Standard Record:
Deliver the standard input signal level to the input jack and control the attenuator to obtain the standard output signal level.

— Record Mode —



Standard Input Level

	LINE IN
Source impedance	10 kΩ
Input level	0.44 V (−5 dB)

Standard Output Level

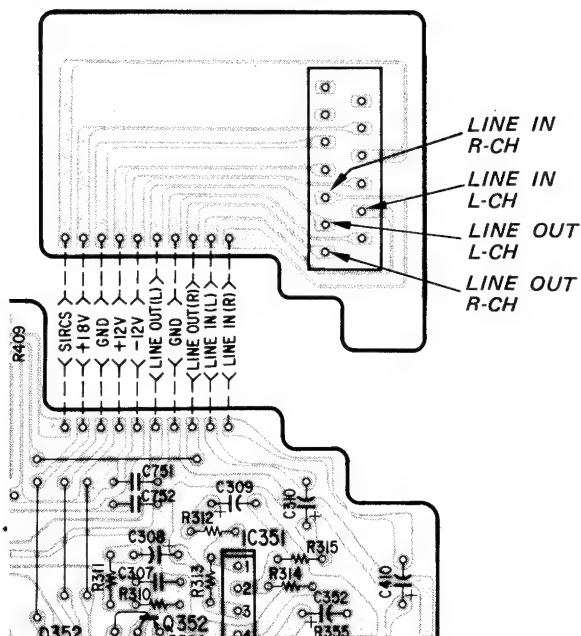
	LINE OUT
Load impedance	47 kΩ
Output level	0.245 V (−10 dB)

Test Tape

Type	Signal	Used for
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-A100	10 kHz, −10 dB	Azimuth Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Location of LINE IN/OUT:

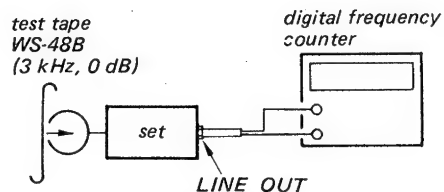
[CONNECTOR BOARD]



Tape Speed Adjustment

Procedure:

1. Mode: playback

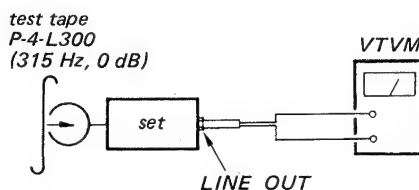


Specifications:

2,910 to 2,970 Hz

Playback Level Adjustment

Procedure:



Adjust RV301 (L-CH), RV401 (R-CH) so that the specifications are satisfied.

Specification:

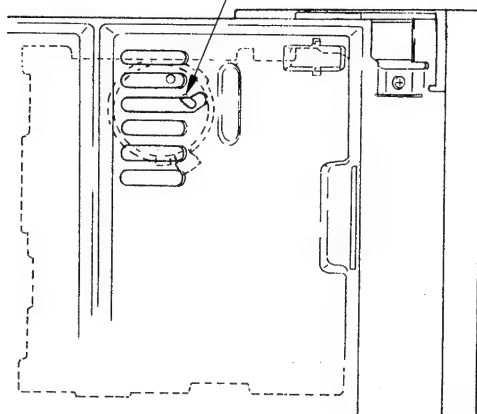
LINE OUT level: 0.22 V to 0.28 V
(-11 dB to -9 dB)

Level difference between channels:

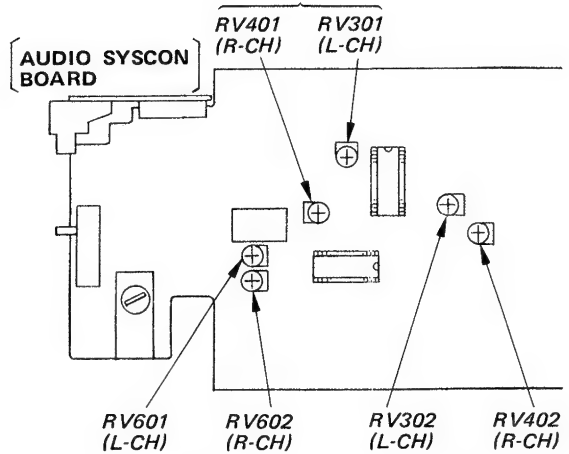
Less than 1.0 dB check that the check point level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

Tape Speed Adjustment (bottom side)



Playback Level Adjustment

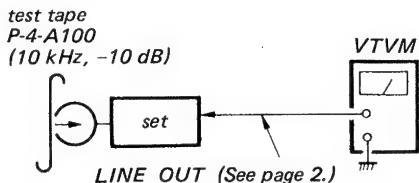


Record Bias Adjustment Record Level Adjustment

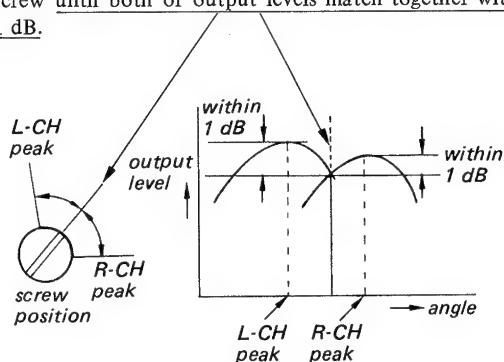
Record/Playback Head Azimuth Adjustment

Procedure:

1. Mode: playback

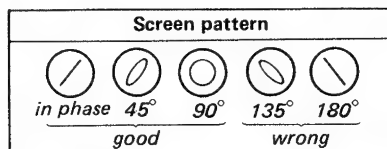
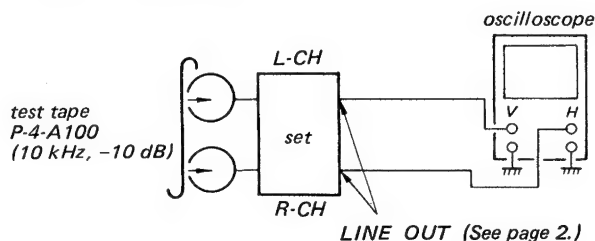


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



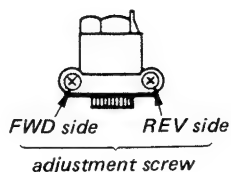
3. Phase check

Mode: forward playback



4. Set in the reverse mode and repeat steps 1-2.
5. After the adjustment, lock the screws with locking compound.

Adjustment Location:

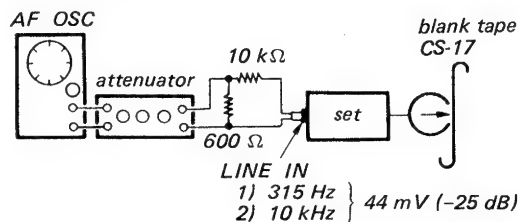


Record Bias Adjustment

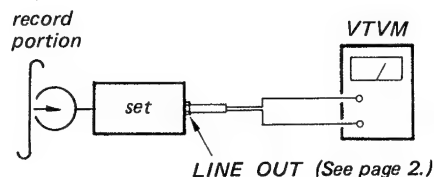
Procedure:

See page 2 for location of LINE IN.

1. Mode: record



2. Mode: playback



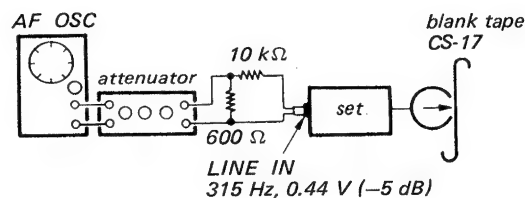
Confirm that the 10 kHz playback output is -0.5 dB to 0.5 dB relative to the 315 Hz output. If necessary, adjust RV601 (L-CH), RV602 (R-CH) and repeat the steps given above.

Record Level Adjustment

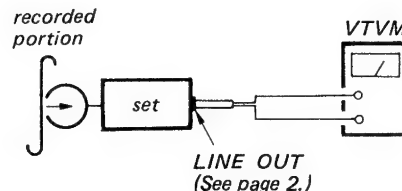
Procedure:

See page 2 for location of LINE IN.

1. Mode: record



2. Mode: playback



3. Playback the signal recorded in step 1. Confirm that the signal level is within the specification below. If necessary, adjust RV302 (L-CH), RV402 (R-CH) and repeat steps 1 to 3.

Specification:

LINE OUT point (see page 2) level:
0.22 V to 0.28 V (-11 dB to -9 dB)

TC-R707/R707M

SONY. SERVICE MANUAL

*US Model
AEP Model
E Model
TC-R 707 M*

*UK Model
E Model
West Germany Model
TC-R 707*

SUPPLEMENT-2

File this supplement with the service manual.

- TC-R 707 M has been added for E model.
- TC-R 707 M (E Model) is the STEREO CASSETTE DECK in FH 919 CD.

- TC-R 707 M (E Model) is almost same as TC-R 707 (E Model).

As only the difference from TC-R 707 (E Model) is described in this supplement-2.

Page	No.	Description	Part No.	
			TC-R 707 M(E Model)	TC-R 707(E Model)
12	2	PLATE(B-L), SIDE	4-925-525-01	Not used
	3	SCREW, CASE (Mx 14)	4-886-821-51	Not used
	4	PLATE(B-R),SIDE	4-925-524-01	Not used
	8	LABEL, MODEL NUMBER	* 3-346-271-01	* 3-346-268-01

TC-R707/R707M

SONY SERVICE MANUAL

US Model
AEP Model
TC-R707M

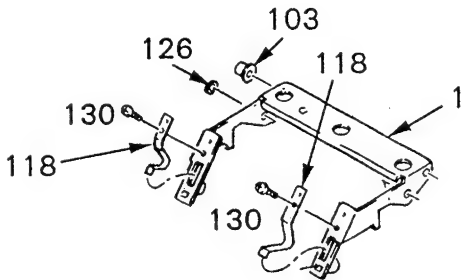
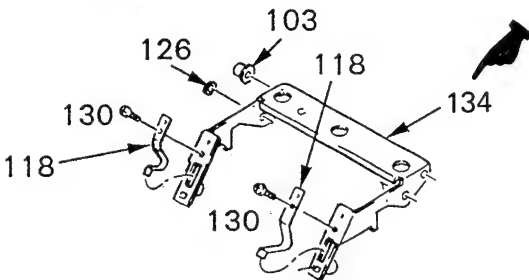
UK Model
E Model

German Model
TC-R707

CORRECTION-1

File this correction with the Service Manual.

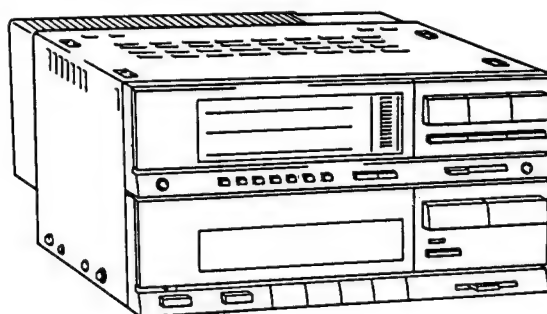
 : Corrected portion (Service Manual page 14)

INCORRECT		CORRECT		
No.		No.	Part No.	Description
1		134	X-3332-548-1	LEVER ASSY, CASSETTE RETAINER
				

TA-909

SERVICE MANUAL

*UK Model
West Germany Model
E Model*



- TA-909 is the INTEGRATED STEREO AMPLIFIER in FH-909CD/909R.

SPECIFICATIONS

Continuous RMS power output (UK, West Germany model)
45 + 45 W
(6 ohms, at 1 kHz, 5% THD)

Peak music power output (E, Saudi Arabia model)
380 W (6 ohms)

Inputs

Input jacks	Jack type	Sensitivity	Impedance
PHONO	Phono	2.5 mV	50 kohms
CD/AUX	Phono	450 mV	50 kohms
MIC	Stereo mini	1 mV	600 ohms

Outputs

HEADPHONES (stereo phone jack)	Accepts headphones of 8 ohms or more
SPEAKER	Accepts speakers of 6 to 16 ohms

General

Power requirements

West Germany model:
220V AC (240 V AC, adjustable by authorized
Sony personnel), 50 Hz

UK model:
240 V AC (220 V AC, adjustable by authorized
Sony personnel), 50 Hz

E, Saudi Arabia model:
120, 220 or 240 V AC, adjustable, 50/60 Hz

Power consumption

West Germany model: 110 W

UK model: 220 W

E, Saudi Arabia model: 110 W

Dimensions

Approx. 220 × 120 × 280 mm (w/h/d)
(8³/₄ × 4³/₄ × 11¹/₄ inches)

Weight

incl. projecting parts and controls
Approx. 4.5 kg (10 lb) net

TABLE OF CONTENTS

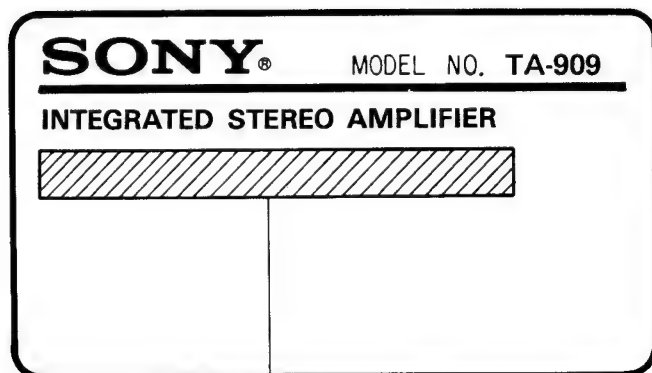
<u>Section</u>	<u>Title</u>	<u>Page</u>
	Specifications	1
	Model Identification	2
1. GENERAL		
1-1.	Location and Function of Controls	3
2. DIAGRAMS		
2-1.	IC Block Diagrams	5
2-2.	Printed Wiring Boards	8
2-3.	Schematic Diagram	13
3. EXPLODED VIEWS		19
4. ELECTRICAL PARTS LIST		21

INTEGRATED STEREO AMPLIFIER
SONY®



MODEL IDENTIFICATION

— *Specification Label* —





UK model: AC: 240 V ~ 50 Hz 220 W

West Germany model: AC: 220 V ~ 50 Hz 110 W

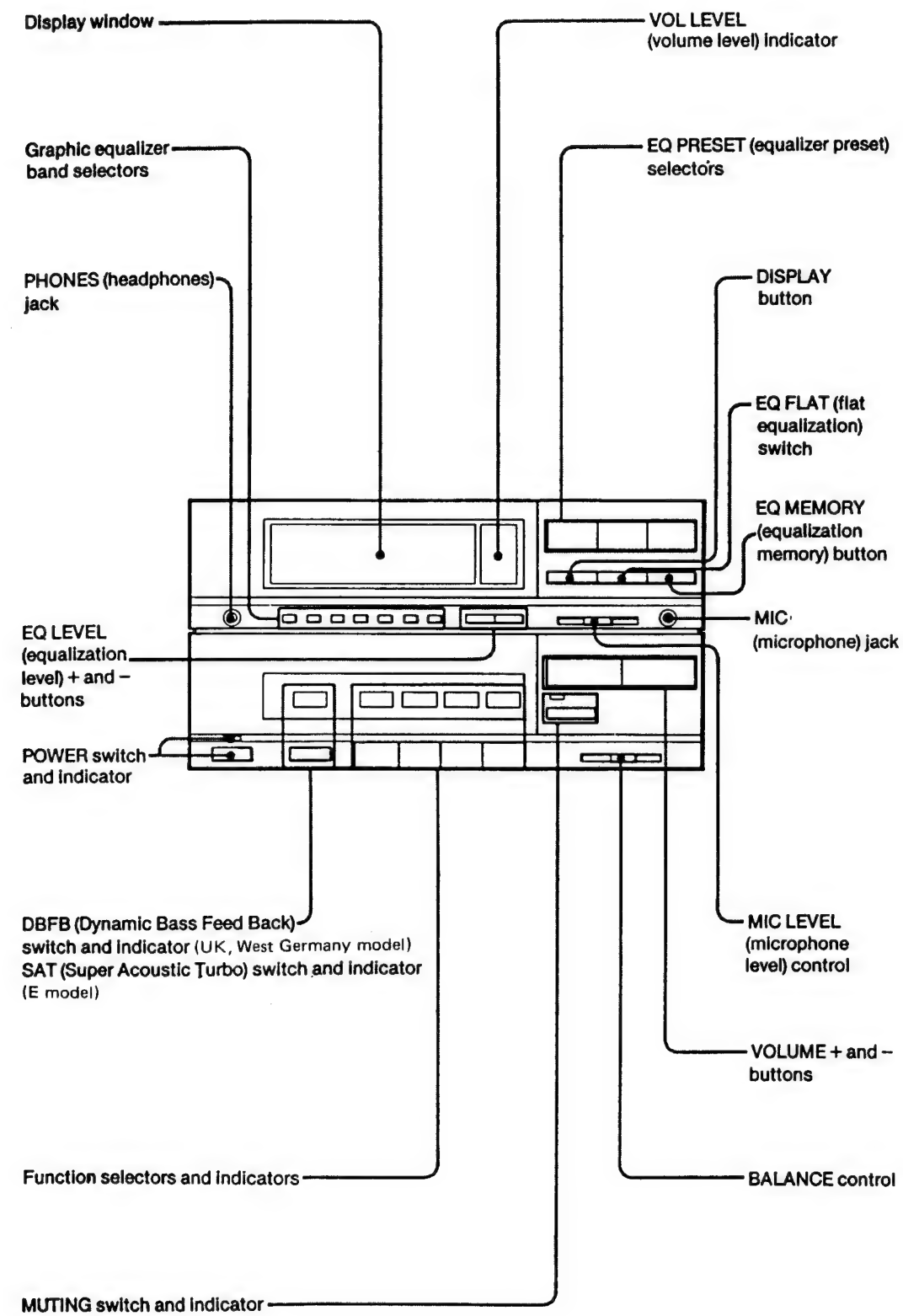
E, Saudi Arabia model: AC: 120/220/240 V ~ 50/60 Hz 110 W

SAFETY-RELATED COMPONENT WARNING!!

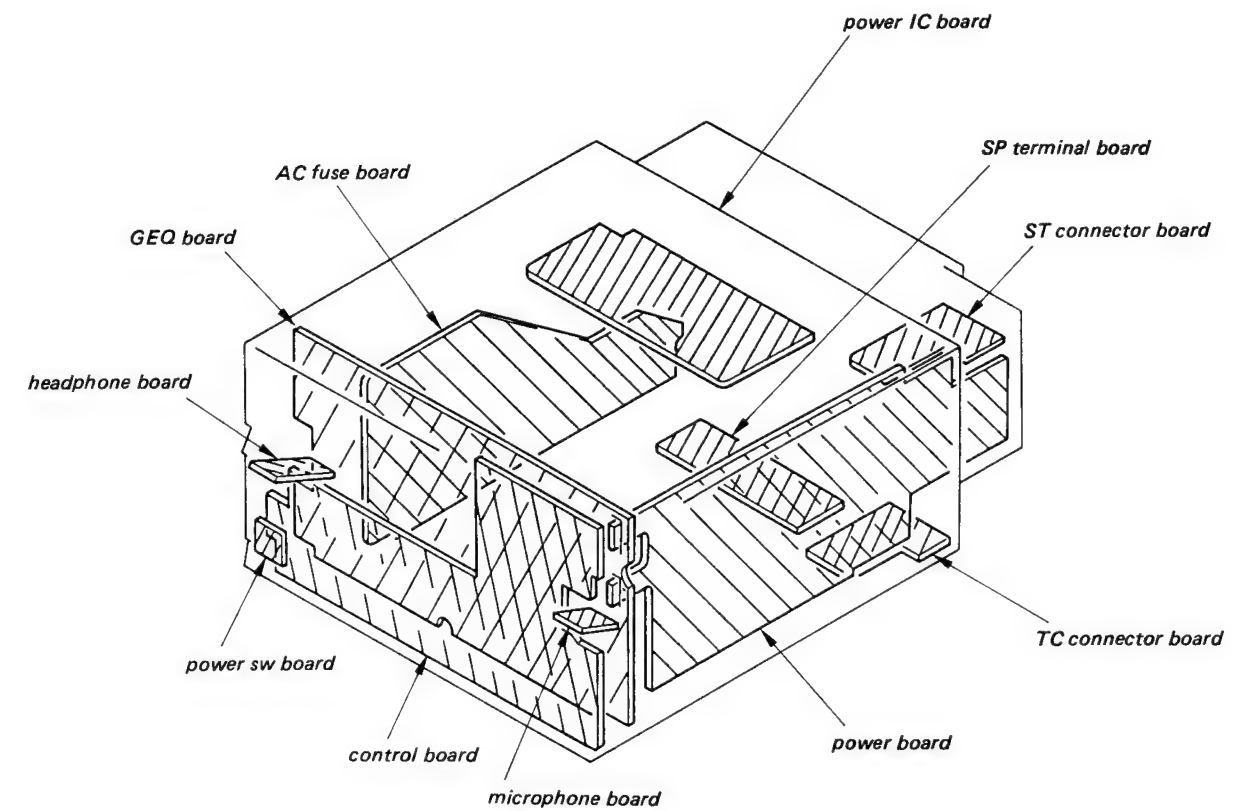
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERA

1-1. LOCATION AND FUNCTION OF CONTROLS

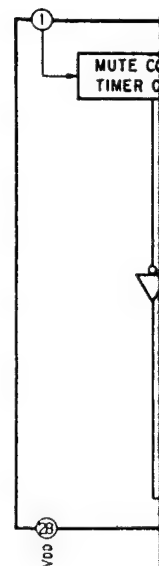


• CIRCUIT BOARDS LOCATION

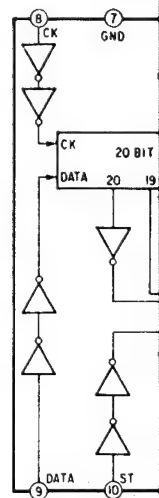


2-1. IC BLOCK

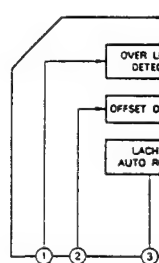
IC102 LC781



IC405 TC917

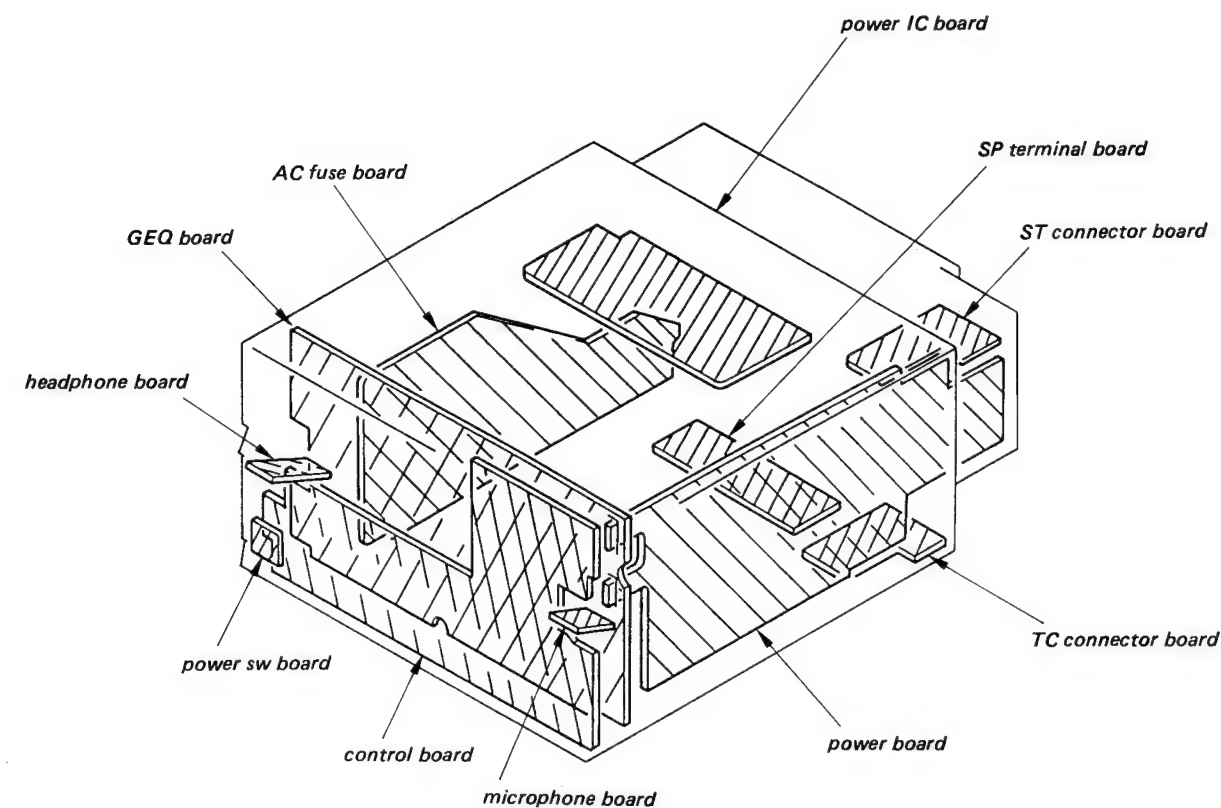


IC701 μPC12



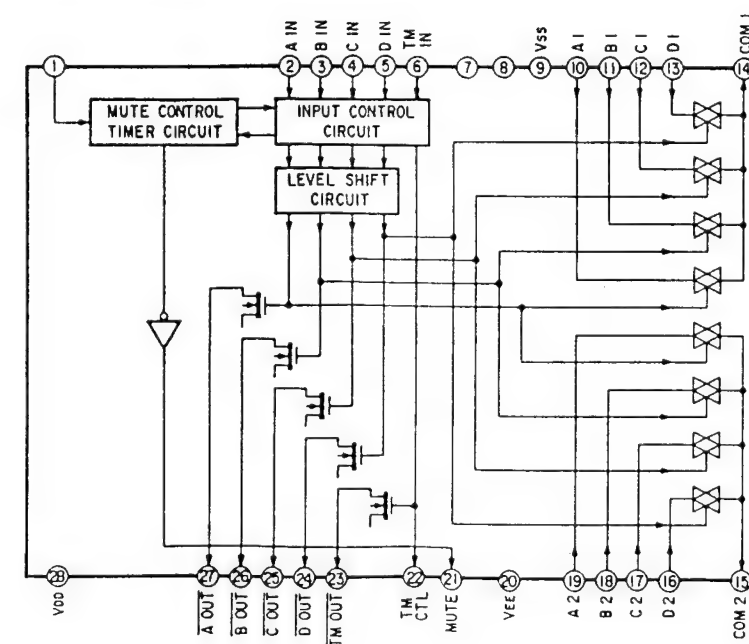
SECTION 2 DIAGRAMS

• CIRCUIT BOARDS LOCATION

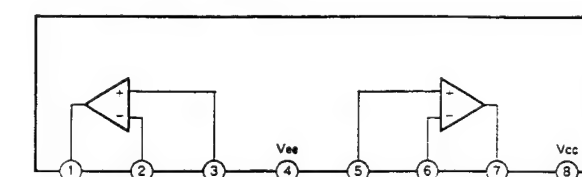


2-1. IC BLOCK DIAGRAMS

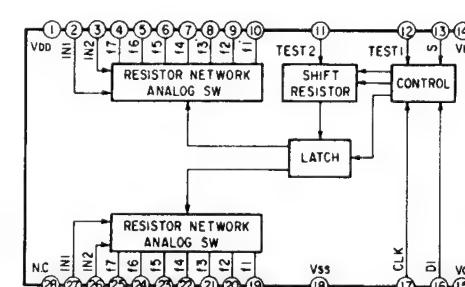
IC102 LC7815M



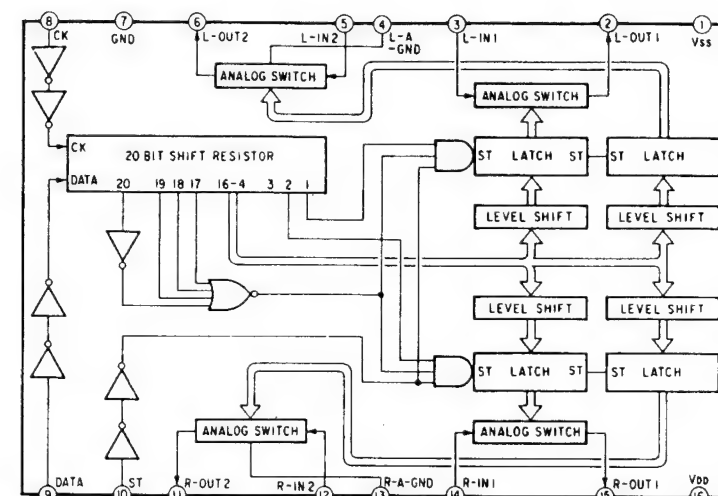
IC302, 401, 601 M5218L



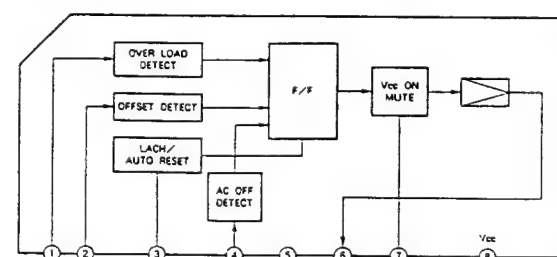
IC402 LC7522



IC405 TC9176P

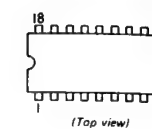


IC701 μ PC1237HA

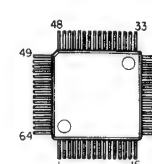


• Semiconductor L

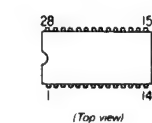
LC6528C-3649



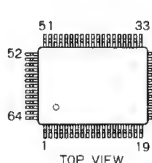
LC7060AN



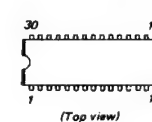
LC7522
LC7815H



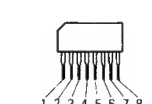
LC7560B



M50765-440SP

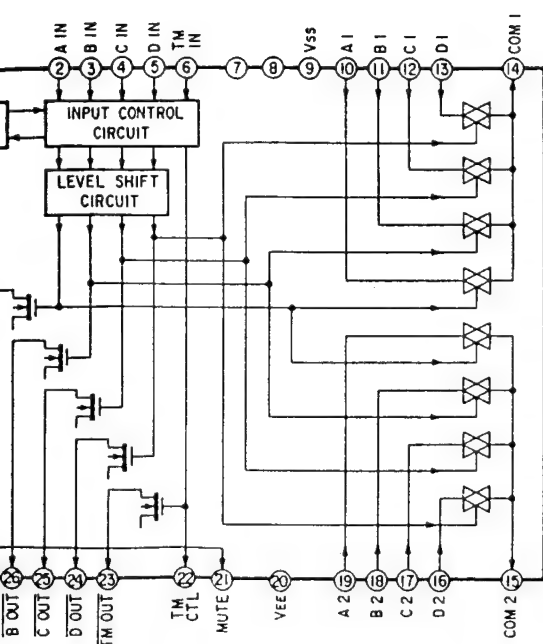


M5218L
 μ PC1237HA

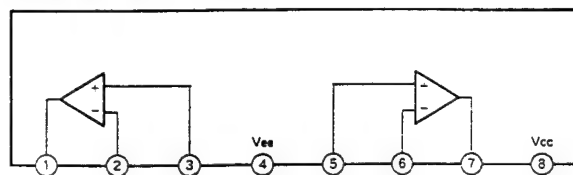


SECTION 2 DIAGRAMS

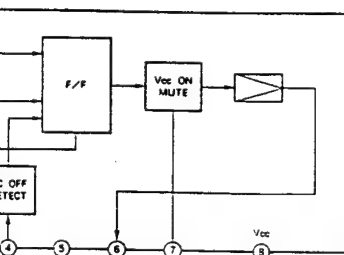
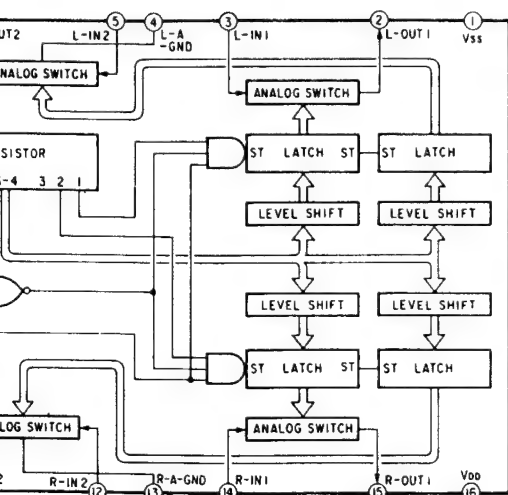
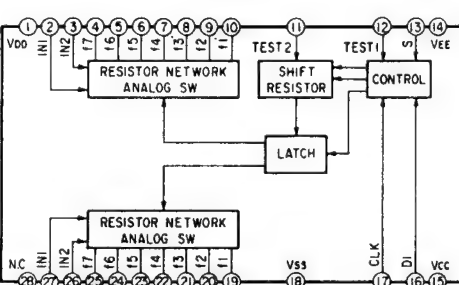
DIAGRAMS



IC302, 401, 601 M5218L

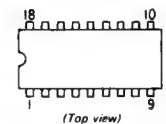


IC402 LC7522

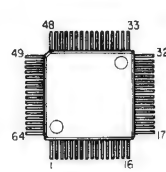


Semiconductor Lead Layouts

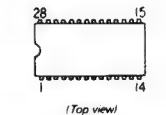
LC6528C-3649



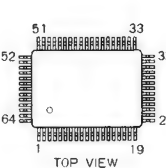
LC7060AN



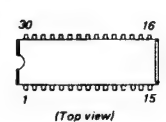
LC7522
LC7815H



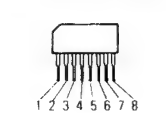
LC7560B



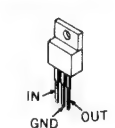
M50765-440SP



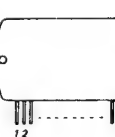
M5218L
μPC1237HA



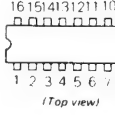
M5F7806
M5F7810
M5F7910



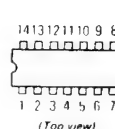
STK4152II



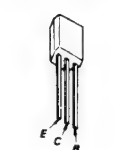
TC9176P



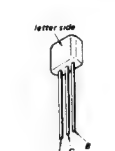
μPC4574C



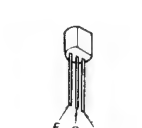
2SA1115
2SC634SP



2SA1175
BN1A4M



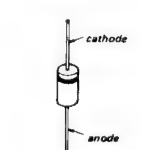
2SB1013
2SC1841-PA



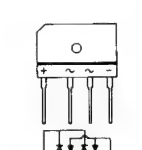
2SK381-E



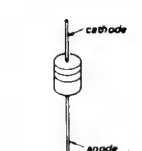
10E2
US1060M
UZL6M2



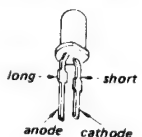
RBV-602-01



RD4.7ES-B



SEL2210S-C
SEL2910A



SEL2413E
SEL2913K-C



Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	E-28	IC101	D-30
D202	E-28	IC102	E-29
D203	D-27	IC301	C-3
D204	D-27	IC302	C-10
D205	E-28	IC303	D-6
D206	E-28	IC401	D-21
D207	E-28	IC402	E-20
D301	C-5	IC403	C-16
D303	D-2	IC404	C-14
D304	D-4	IC405	B-19
D305	F-10	IC601	I-21
D306	E-9	IC602	H-19
D307	D-4	IC701	H-17
D308	C-6	IC901	D-27
D309	F-8	IC902	E-27
D310	F-10	IC903	H-27
D311	F-9	IC951	F-5
D313	F-7	IC952	F-5
D314	F-7		
D315	F-7	Q301	F-7
D316	E-7	Q302	F-7
D317	E-7	Q303	F-7
D318	B-8	Q304	E-7
D319	C-4	Q305	E-7
D320	B-5	Q306	C-7
D321	B-6	Q307	F-10
D322	B-7	Q308	D-8
D323	C-5	Q401	C-19
D324	B-3	Q402	C-20
D325	C-9	Q403	C-20
D501	B-18	Q404	C-19
D502	A-18	Q405	C-17
D503	A-17	Q406	C-18
D504	A-16	Q407	C-19
D505	A-15	Q408	B-20
D506	A-14	Q409	B-21
D507	A-14	Q410	A-20
D508	A-20	Q451	F-20
D509	D-17	Q452	F-20
D510	B-20	Q453	F-20
D511	C-15	Q454	F-19
D601	H-21	Q455	F-18
D701	I-17	Q456	F-18
D901	D-24	Q457	F-19
D902	D-25	Q458	B-20
D903	D-26	Q459	B-21
D904	D-26	Q601	J-20
D905	D-26	Q651	I-20
D906	E-26	Q701	I-17
D907	E-27	Q702	H-17
D908	E-27	Q751	I-17
D909	F-26	Q951	G-4
D910	F-27	Q952	F-4
D951	G-5	Q953	H-2, H-7
D952	G-5	Q954	G-4
D953	G-5		
D954	G-5		
D955	G-3		
D956	G-4		
D957	F-4		
D958	I-2, I-7		
D959	H-3		
D960	G-2		
D961	H-3		
D962	F-5		

2-2. PRINTED WIRING BOARDS

— Conductor Side —

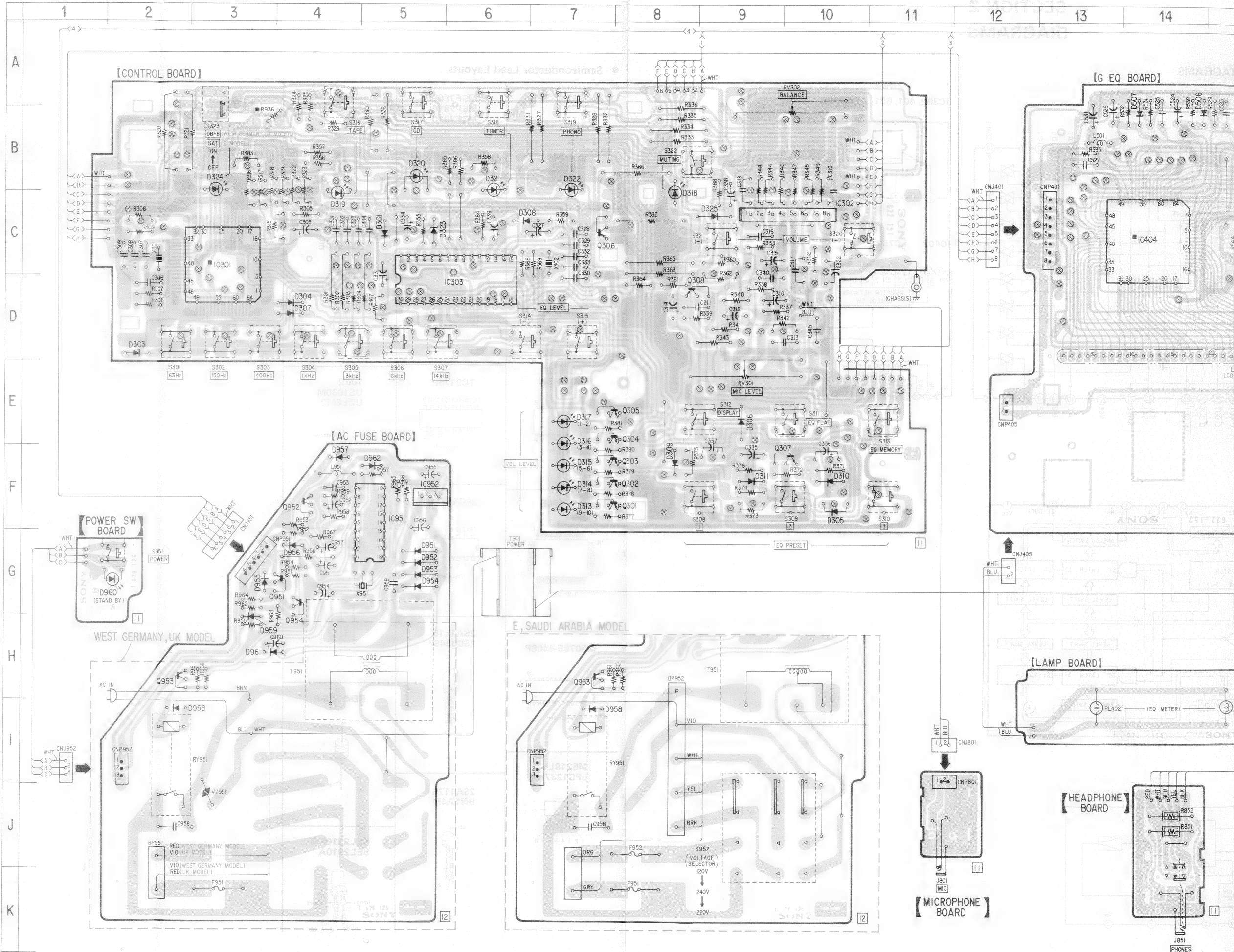
- See page 7 for Semiconductor Location.
- See page 6 for Semiconductor Lead Layouts.

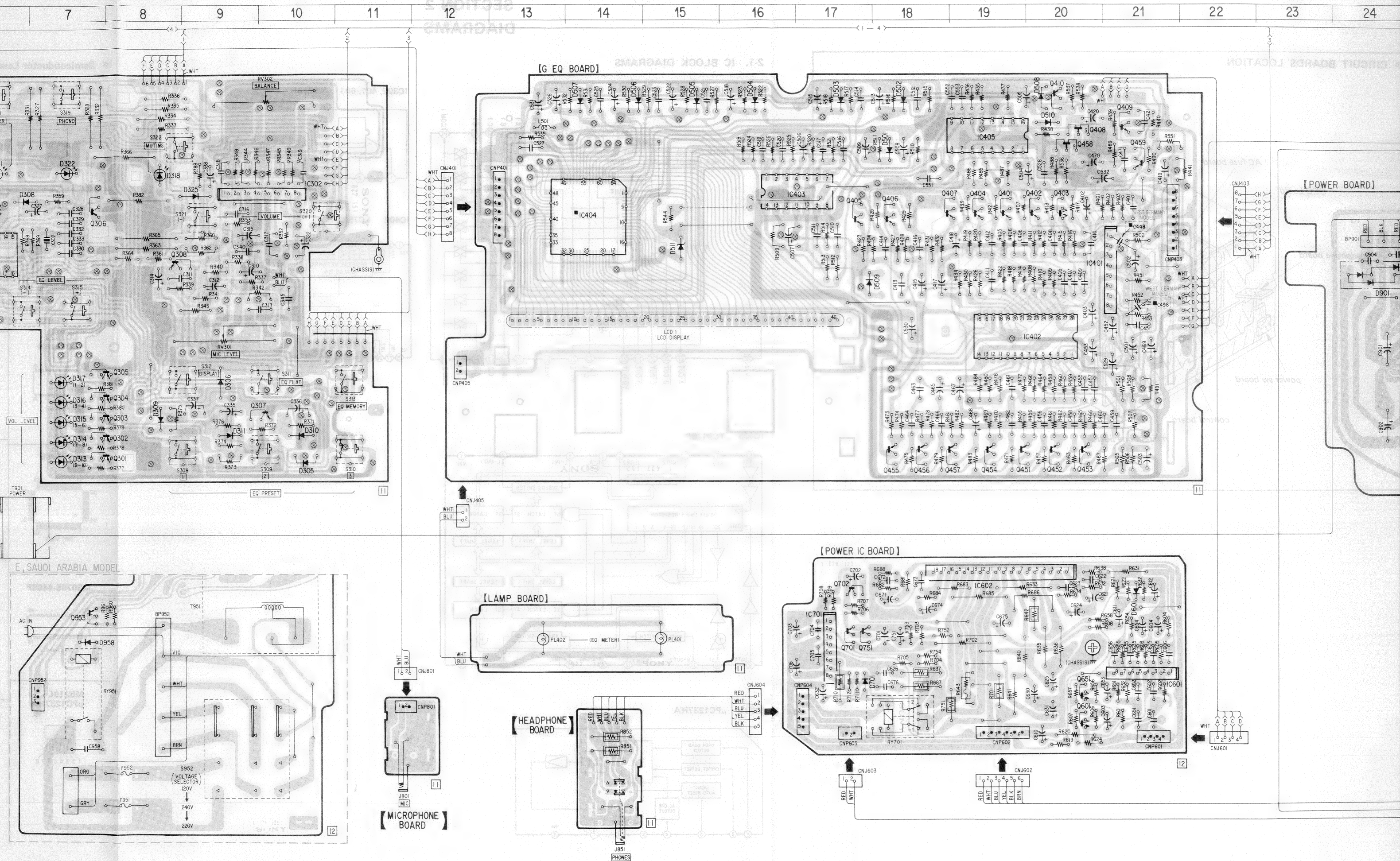
Note on Schematic Diagram:

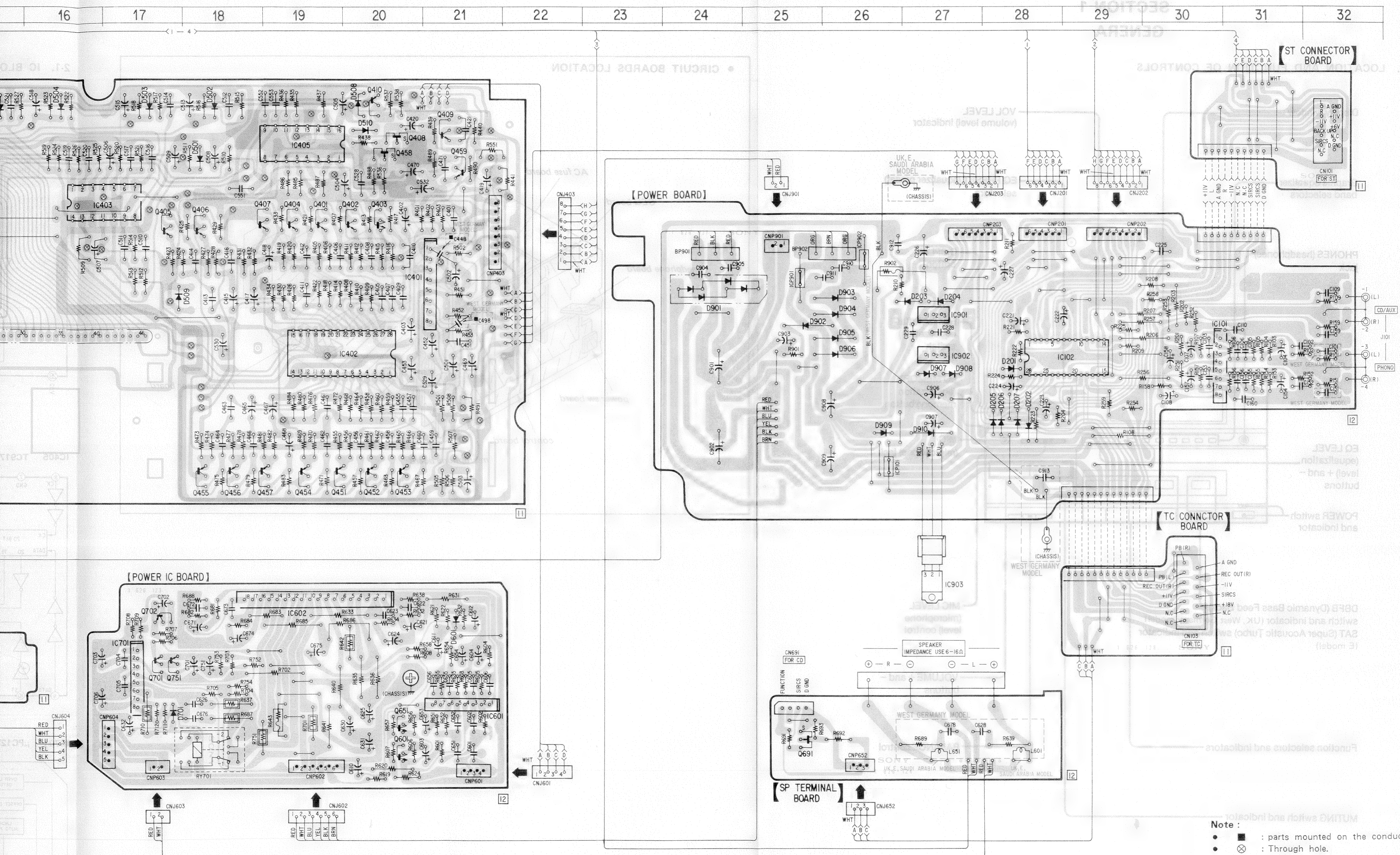
- All capacitors are in μF unless otherwise noted.
- pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.
- : B+ Line.
- : B- Line.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltage are taken with a VOM (50 k Ω /V).
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PHONO

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Switch	Position
S301	63 Hz	OFF
S302	150 Hz	OFF
S303	400 Hz	OFF
S304	1 kHz	OFF
S305	3 kHz	OFF
S306	6 kHz	OFF
S307	14 kHz	OFF
S308	EQ PRESET/1	OFF
S309	EQ PRESET/2	OFF
S310	EQ PRESET/3	OFF
S311	EQ FLAT	OFF
S312	DISPLAY	OFF
S313	EQ MEMORY	OFF
S314	EQ LEVEL/—	OFF
S315	EQ LEVEL/+	OFF
S316	TAPE	OFF
S317	CD	OFF
S318	TUNER	OFF
S319	PHONO	OFF
S320	VOLUME/+	OFF
S321	VOLUME/—	OFF
S322	MUTING	OFF
S323	DBFB	OFF
	(UK, West Germany model)	
	SAT	OFF
	(E, Saudi Arabia model)	
S951	POWER	OFF
S952	VOLTAGE SELECTOR	OFF
	(E, Saudi Arabia model)	

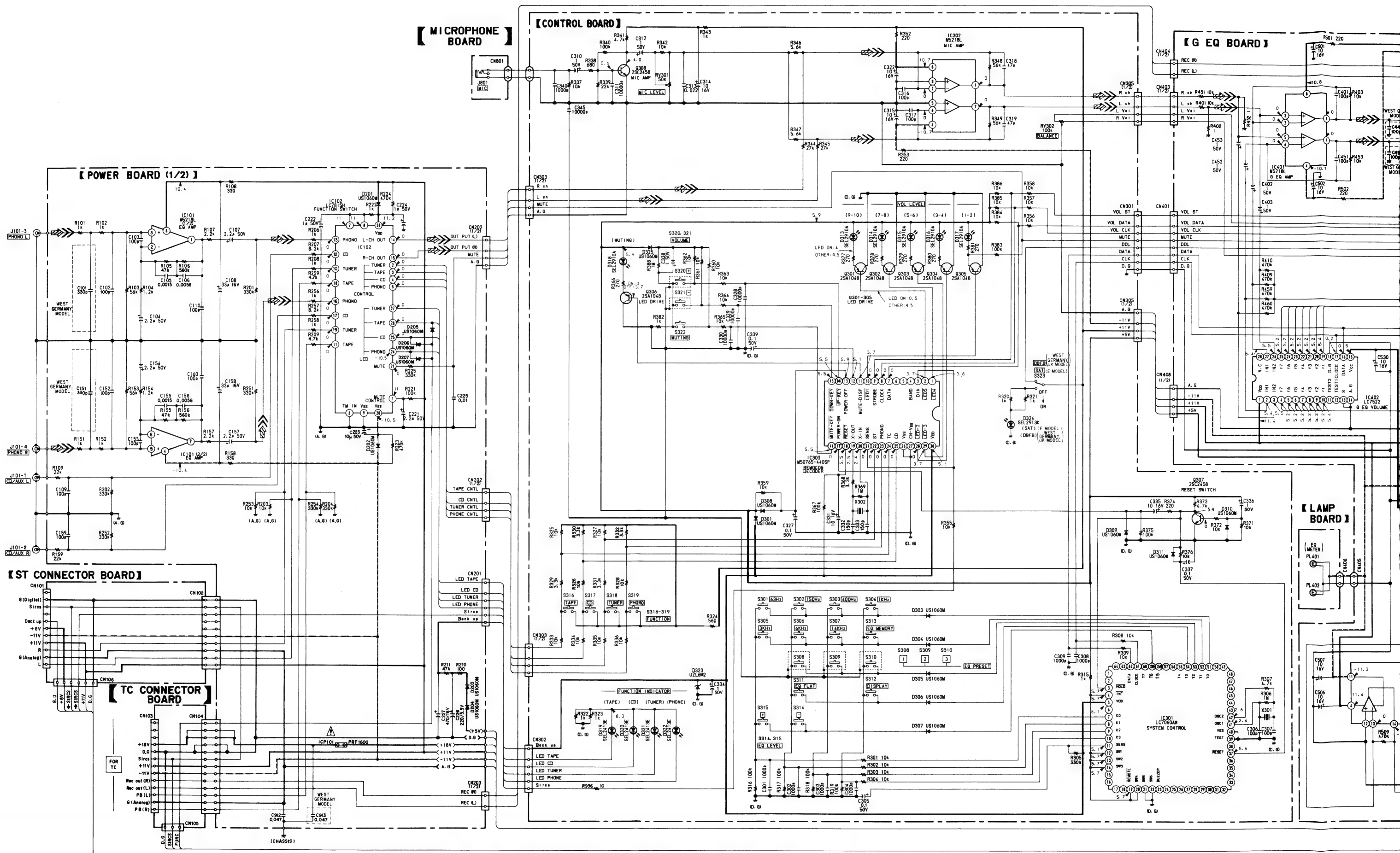


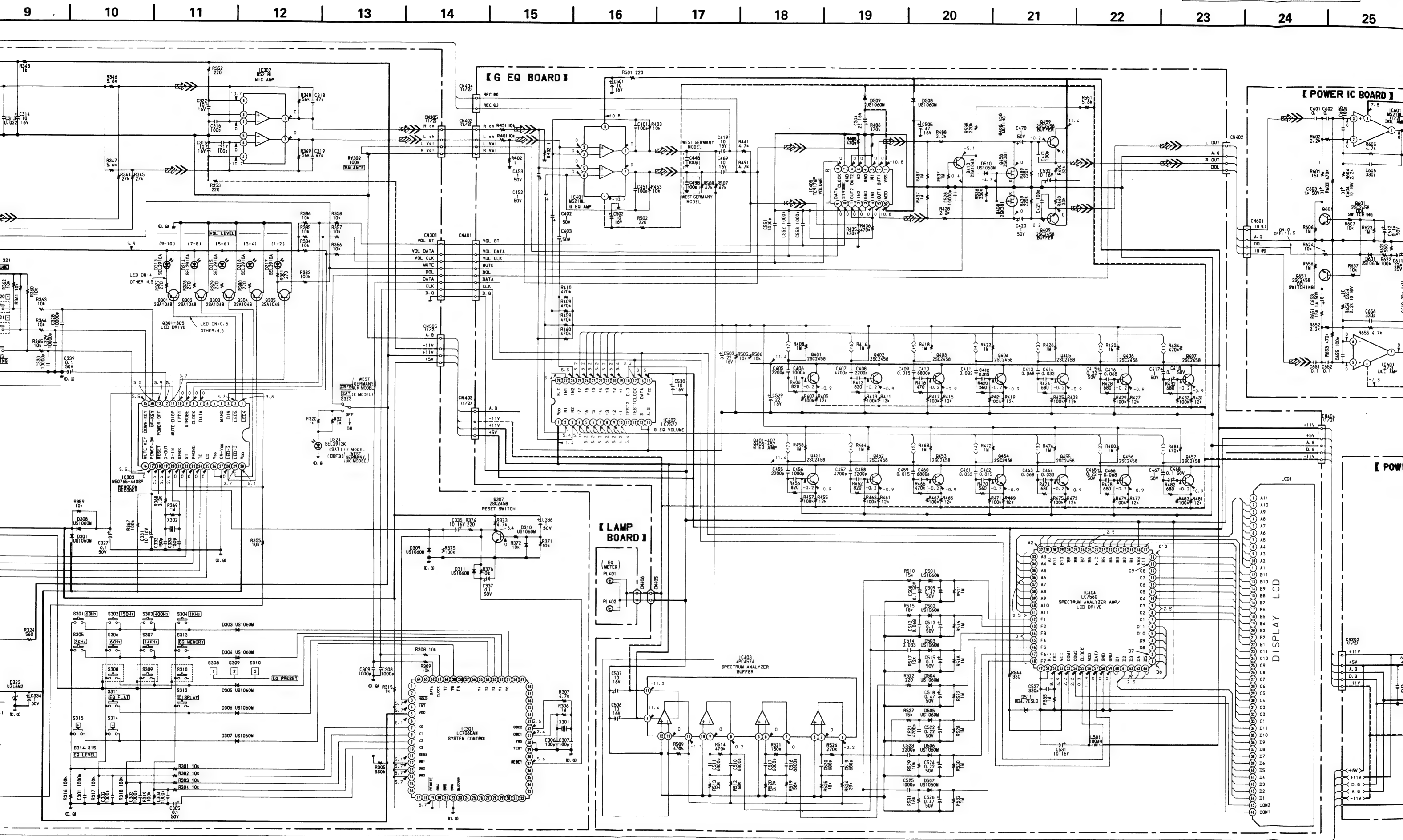


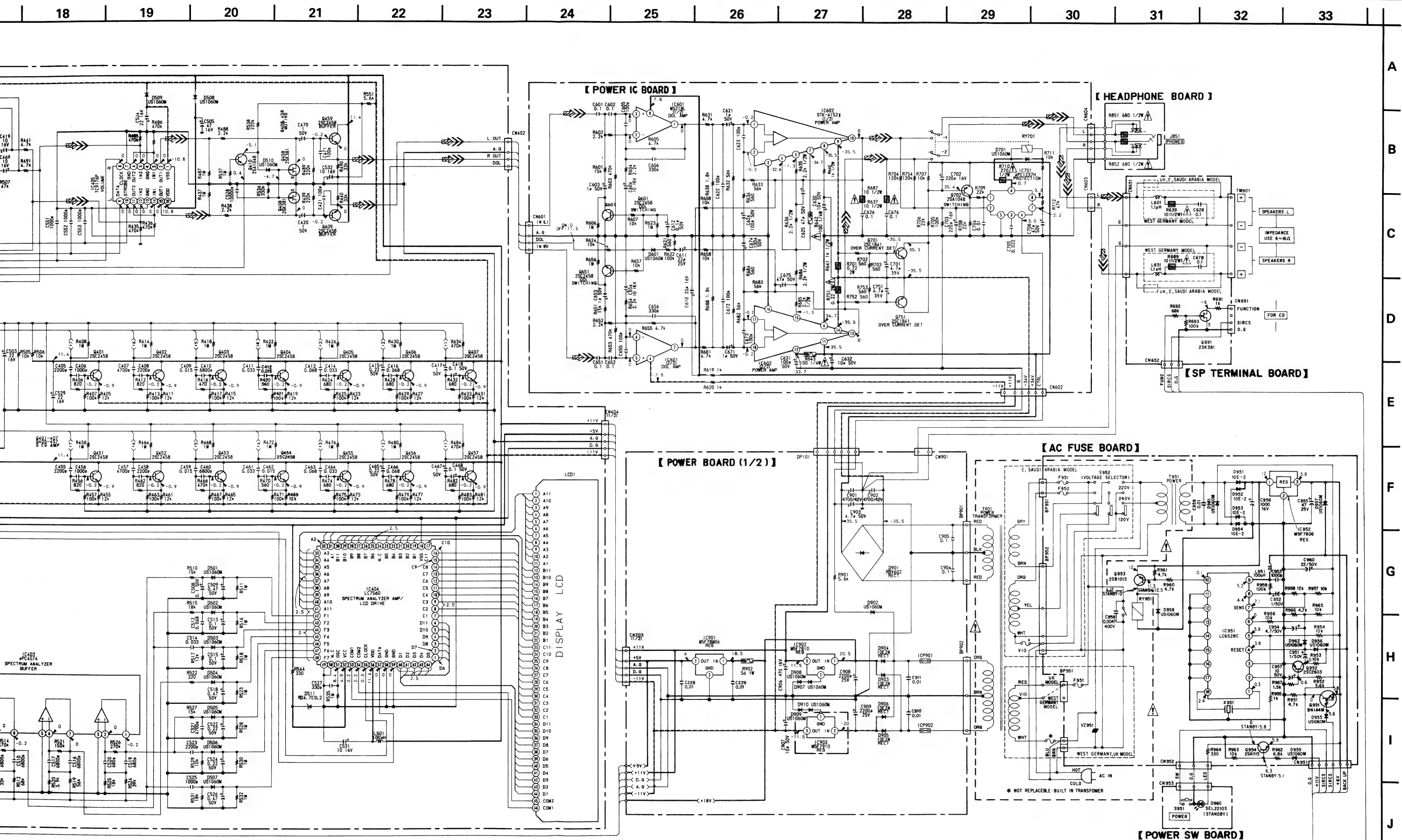


Note :

- ■ : parts mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.







SECTION 3 EXPLODED VIEW

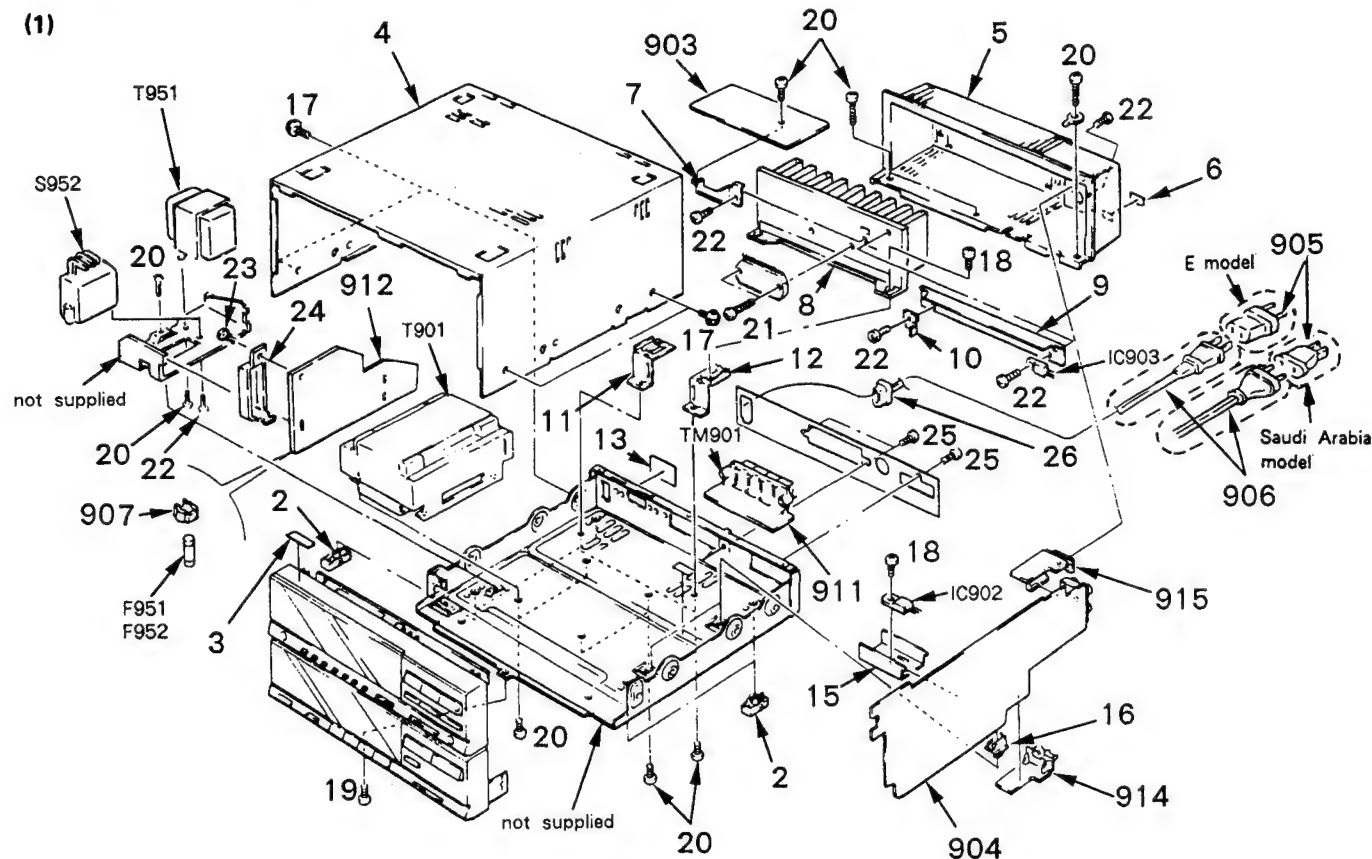
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
(RED) ... KNOB, BALANCE (WHITE)

↑ Cabinet's Color ↑ Parts' Color

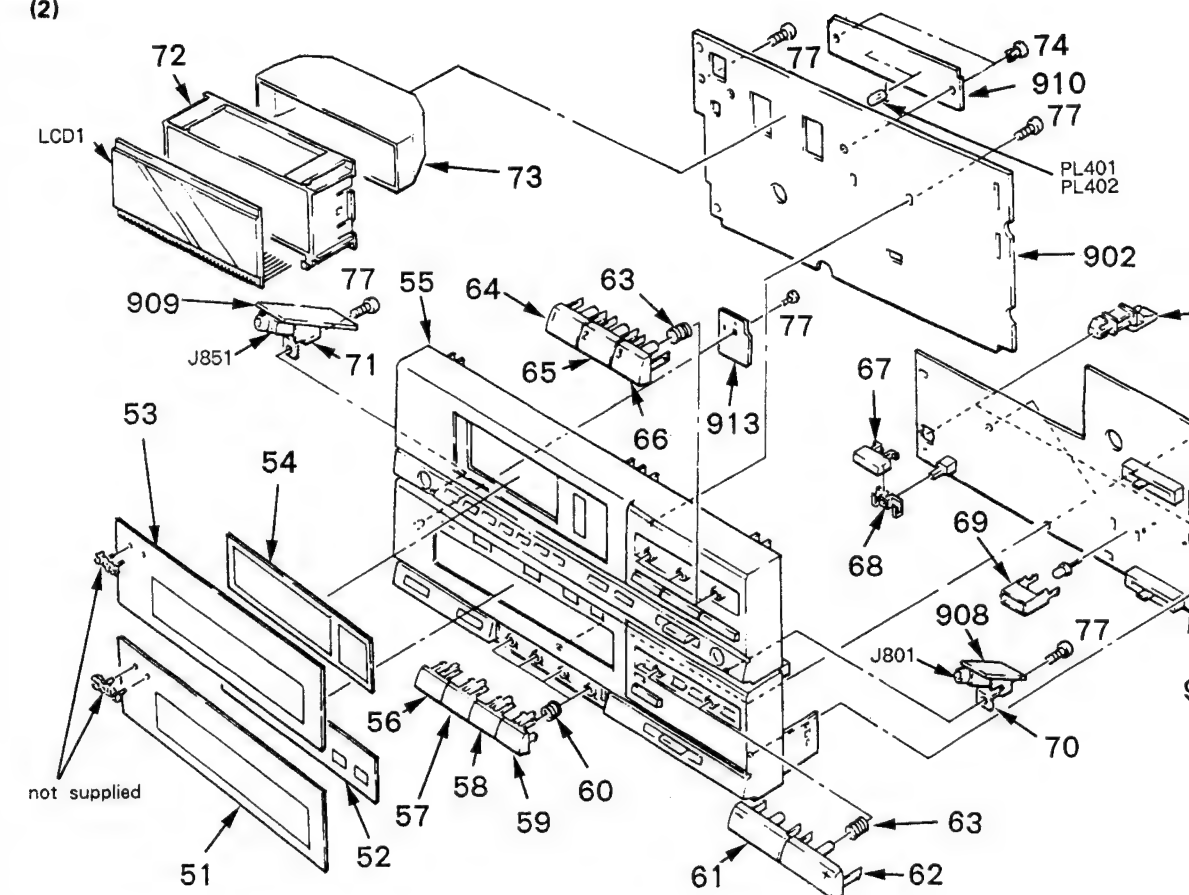
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks
2	X-4902-937-1	FOOT ASSY, RUBBER	
3	3-701-690-01	(UK)...LABEL (MADE IN JAPAN)	
4	4-920-118-01	CASE	
5	*4-920-116-11	PLATE, JACK	
6	*4-920-876-01	LABEL (PHONO)	
7	*4-910-064-01	BRACKET (H), PC BOARD	
8	*4-920-108-01	HEAT SINK	
9	*4-920-112-01	PLATE, BLOCK	
10	*4-920-171-01	BRACKET	
11	*4-914-393-01	BRACKET (LEFT), HEAT SINK	
12	*4-914-394-01	BRACKET (RIGHT), HEAT SINK	
13	*4-922-737-01	(E,Saudi Arabia)	
	LABEL, MODEL NUMBER (E2/E3)	
	*4-922-738-01	(UK).....LABEL, MODEL NUMBER (UK)	
	*4-922-739-01	(West Germany)..LABEL, MODEL NUMBER (AE4)	
14	*4-920-885-01	COVER, REAR	
15	*4-880-403-11	HEAT SINK	
16	*3-642-310-00	HOLDER, CIRCUIT BOARD	
17	3-704-366-01	SCREW (CASE) (M3X8)	
18	7-682-548-04	SCREW +BVTT 3X8 (S)	
19	7-685-870-01	SCREW +BVTT 3X5 (S)	
20	7-682-147-01	SCREW +BVTT 3X6 (S)	
21	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
22	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
23	4-812-134-00	RIVET NYLON, 3.5	
24	4-925-571-01	COVER (INSULATING)	
25	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

No.	Part No.	Description	Remarks
26	3-703-244-00	(UK,West Germany,Saudi Arabia)	
	BUSHING (2104), CORD	
	3-703-571-00	(E).....BUSHING (S) (4516), CORD	
903	*A-4388-729-A	MOUNTED PCB, POWER IC	
904	*A-4394-459-A	(West Germany).....MOUNTED PCB, POWER	
	*A-4394-460-A	(E,Saudi Arabia,UK)...MOUNTED PCB, POWER	
905	△1-506-409-11	(Saudi Arabia)...ADAPTOR, CONVERSION	
	△1-526-565-00	(E).....AC PLUG ADAPTOR	
906	△1-551-188-XX	(E).....CORD, POWER	
	△1-555-750-00	(Saudi Arabia,West Germany)..CORD, POWER	
	△1-556-035-00	(UK).....CORD, POWER	
907	1-533-183-11	HOLDER, FUSE	
911	*1-626-124-11	PC BOARD, SPEAKER TERMINAL	
912	*1-626-125-11	PC BOARD, AC FUSE	
914	*1-626-128-11	PC BOARD, TC CONNECTOR	
915	*1-626-129-11	PC BOARD, ST CONNECTOR	
F951	△1-532-285-00	FUSE, TIME-LAG	
F952	△1-532-285-00	(E,Saudi Arabia)...FUSE, TIME-LAG	
S952	△1-571-437-11	(E,Saudi Arabia)	
	SWITCH, POWER VOLTAGE CHANGE	
T901	△1-448-879-11	(E,Saudi Arabia)....TRANSFORMER, POWER	
T901	△1-448-880-11	(UK,West Germany)....TRANSFORMER, POWER	
T951	△1-449-194-11	TRANSFORMER, POWER	
TM901	1-536-705-00	TERMINAL BOARD (SP)	

(2)

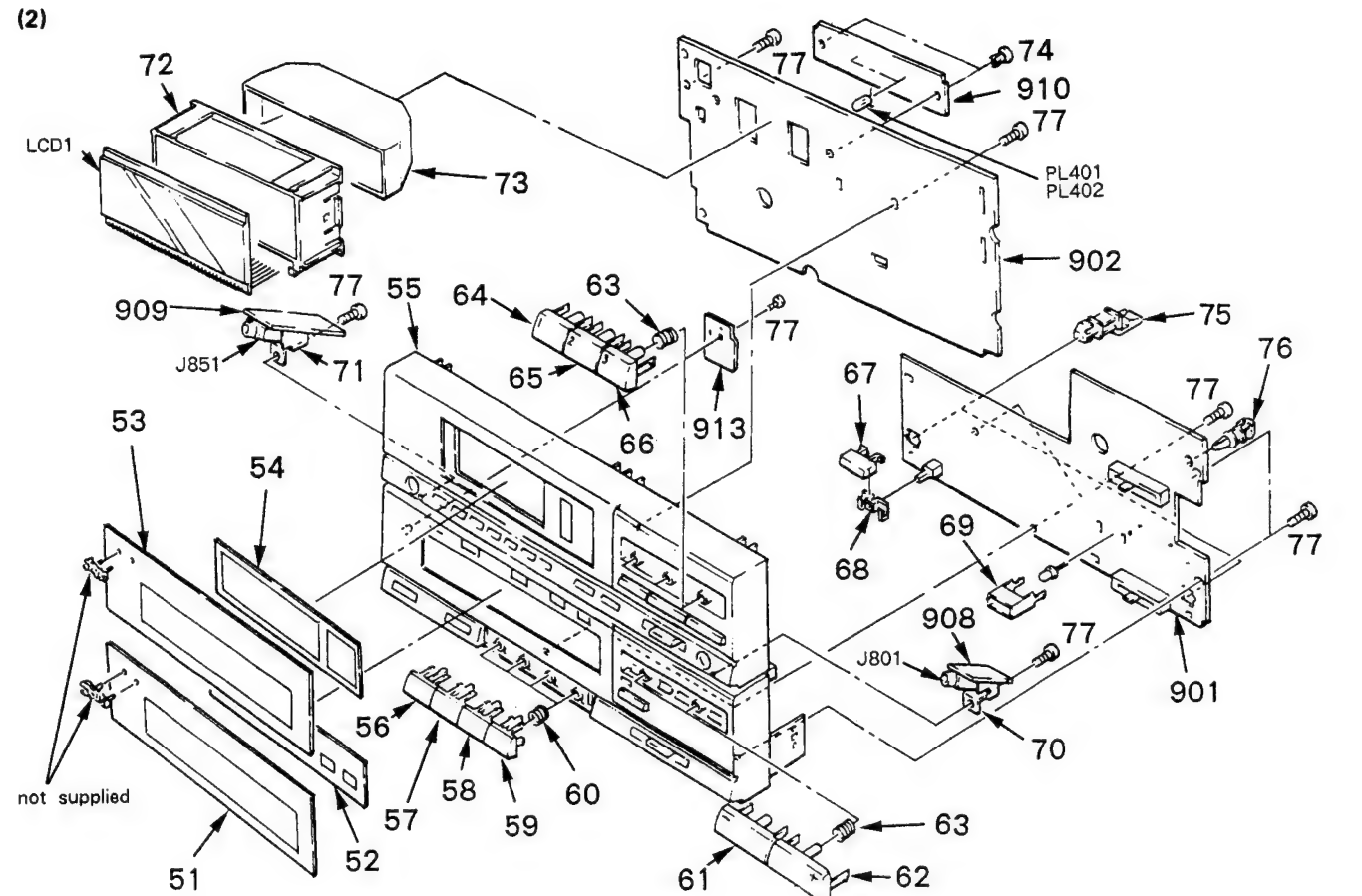
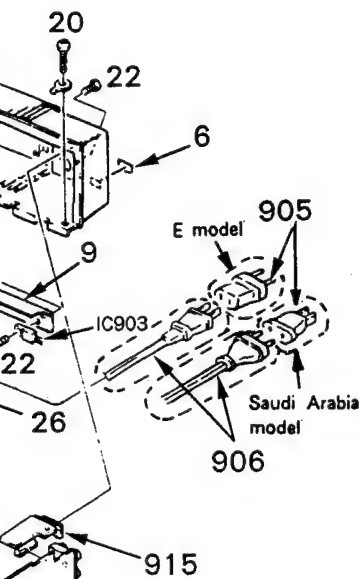


No.	Part No.	Description	Remarks
51	4-925-521-01	(UK,West Germany)..PLATE (TA), ORNAMENTAL	
	4-925-521-11	(E,Saudi Arabia)..PLATE (TA), ORNAMENTAL	
52	4-914-397-31	(E,Saudi Arabia)	
		...PLATE (FUNCTION), INDICATION	
	4-914-397-41	(UK,West Germany)	
		...PLATE (FUNCTION), INDICATION	
53	4-925-520-01	(UK,West Germany)..PLATE (GE), ORNAMENTAL	
	4-925-520-11	(E,Saudi Arabia)..PLATE (GE), ORNAMENTAL	
54	4-914-395-11	PLATE, INDICATION	
55	X-4919-665-1	(UK,West Germany)...PANEL ASSY	
	X-4919-666-1	(E,Saudi Arabia)...PANEL ASSY	
56	4-914-387-01	(UK,West Germany)..BUTTON (FUNCTION)(TAPE)	
	4-914-387-41	(E,Saudi Arabia)..BUTTON (FUNCTION)(TAPE)	
57	4-914-387-11	(UK,West Germany)...BUTTON (FUNCTION)(CD)	
	4-914-387-51	(E,Saudi Arabia)...BUTTON (FUNCTION)(CD)	
58	4-914-387-21	(UK,West Germany)...BUTTON (FUNCTION) (TUNER)	
		(FUNCTION) (TUNER)	
	4-914-387-61	(E,Saudi Arabia)...BUTTON (FUNCTION) (TUNER)	
59	4-914-387-31	(UK,West Germany)...BUTTON (FUNCTION) (PHONO)	
	4-914-387-71	(E,Saudi Arabia)...BUTTON (FUNCTION) (PHONO)	
60	3-538-940-01	SPRING, COMPRESSION	
61	4-920-105-31	(UK,West Germany)...BUTTON (VOLUME)	
	4-920-105-51	(E,Saudi Arabia)...BUTTON (VOLUME)	
62	4-920-105-21	(UK,West Germany)...BUTTON (VOLUME)	
	4-920-105-41	(E,Saudi Arabia)...BUTTON (VOLUME)	
63	3-564-333-21	SPRING, COMPRESSION	

No.	Part No.	Description	Remarks
64	4-925-519-01	(UK,West Germany)...BU	
	4-925-519-31	(E,Saudi Arabia)...BU	
65	4-925-519-11	(UK,West Germany)...BU	
	4-925-519-41	(E,Saudi Arabia)...BU	
66	4-925-519-21	(UK,West Germany)...BU	
	4-925-519-51	(E,Saudi Arabia)...BU	
67	4-914-388-21	(E,Saudi Arabia)...BU	
	4-914-388-31	(UK,West Germany)...BU	
68	*4-914-390-01	JOINT, DOL	
69	*4-904-509-01	HOLDER (B), LED	
70	*4-914-391-01	BRACKET, MIC	
71	*4-914-392-01	BRACKET, HP	
72	*X-4910-090-1	ILLUMINATOR ASSY	
73	*4-920-101-01	HOUSE, LAMP	
74	4-812-134-00	RIVET NYLON, 3.5	
75	*4-839-304-00	HOLDER, CIRCUIT BOARD	
77	7-685-646-79	SCREW +BVTP 3X8 TYPE2	
901	*A-4375-370-A	MOUNTED PCB, CONTROL	
902	*A-4375-371-A	MOUNTED PCB, GEQ	
908	*1-622-153-11	PC BOARD, MICROPHONE	
909	*1-622-154-11	PC BOARD, HEADPHONE	
910	*1-622-155-11	PC BOARD, LAMP	
913	*1-626-126-11	PC BOARD, POWER SW	
J801	1-507-974-11	JACK	
J851	1-563-951-11	JACK	
LCD1	1-807-813-11	DISPLAY PANEL, LIQUID C	
PL401	1-518-527-51	LAMP, PILOT	
PL402	1-518-527-51	LAMP, PILOT	

SECTION 4
ELECTRICAL PARTS LIST

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	4-925-521-01	(UK, West Germany)...PLATE (TA), ORNAMENTAL		64	4-925-519-01	(UK, West Germany)...BUTTON (GE PRESET)	
	4-925-521-11	(E, Saudi Arabia)...PLATE (TA), ORNAMENTAL			4-925-519-31	(E, Saudi Arabia)...BUTTON (GE PRESET)	
52	4-914-397-31	(E, Saudi Arabia)...PLATE (FUNCTION), INDICATION		65	4-925-519-11	(UK, West Germany)...BUTTON (GE PRESET)	
	4-914-397-41	(UK, West Germany)...PLATE (FUNCTION), INDICATION			4-925-519-41	(E, Saudi Arabia)...BUTTON (GE PRESET)	
53	4-925-520-01	(UK, West Germany)...PLATE (GE), ORNAMENTAL		66	4-925-519-21	(UK, West Germany)...BUTTON (GE PRESET)	
	4-925-520-11	(E, Saudi Arabia)...PLATE (GE), ORNAMENTAL			4-925-519-51	(E, Saudi Arabia)...BUTTON (GE PRESET)	
54	4-914-395-11	PLATE, INDICATION		67	4-914-388-21	(E, Saudi Arabia)...BUTTON (DOL) (SAT)	
55	X-4919-665-1	(UK, West Germany)...PANEL ASSY			4-914-388-31	(UK, West Germany)...BUTTON (DOL) (DBFB)	
	X-4919-666-1	(E, Saudi Arabia)...PANEL ASSY		68	*4-914-390-01	JOINT, DOL	
56	4-914-387-01	(UK, West Germany)...BUTTON (FUNCTION) (TAPE)		69	*4-904-509-01	HOLDER (B), LED	
	4-914-387-41	(E, Saudi Arabia)...BUTTON (FUNCTION) (TAPE)		70	*4-914-391-01	BRACKET, MIC	
57	4-914-387-11	(UK, West Germany)...BUTTON (FUNCTION) (CD)		71	*4-914-392-01	BRACKET, HP	
	4-914-387-51	(E, Saudi Arabia)...BUTTON (FUNCTION) (CD)		72	*X-4910-090-1	ILLUMINATOR ASSY	
58	4-914-387-21	(UK, West Germany)...BUTTON (FUNCTION) (TUNER)		73	*4-920-101-01	HOUSE, LAMP	
	4-914-387-61	(E, Saudi Arabia)...BUTTON (FUNCTION) (TUNER)		74	4-812-134-00	RIVET NYLON, 3.5	
59	4-914-387-31	(UK, West Germany)...BUTTON (FUNCTION) (PHONO)		75	*4-839-304-00	HOLDER, CIRCUIT BOARD	
	4-914-387-71	(E, Saudi Arabia)...BUTTON (FUNCTION) (PHONO)		77	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
60	3-538-940-01	SPRING, COMPRESSION		901	*A-4375-370-A	MOUNTED PCB, CONTROL	
61	4-920-105-31	(UK, West Germany)...BUTTON (VOLUME)		902	*A-4375-371-A	MOUNTED PCB, GEQ	
	4-920-105-51	(E, Saudi Arabia)...BUTTON (VOLUME)		908	*1-622-153-11	PC BOARD, MICROPHONE	
62	4-920-105-21	(UK, West Germany)...BUTTON (VOLUME)		909	*1-622-154-11	PC BOARD, HEADPHONE	
	4-920-105-41	(E, Saudi Arabia)...BUTTON (VOLUME)		910	*1-622-155-11	PC BOARD, LAMP	
63	3-564-333-21	SPRING, COMPRESSION		912	*1-626-125-11	PC BOARD, AC FUSE	
				913	*1-626-126-11	PC BOARD, POWER SW	
				914	*1-626-128-11	PC BOARD, TC CONNECTOR	
				915	*1-626-129-11	PC BOARD, ST CONNECTOR	
				BP901	*1-508-830-12	H TYPE BASE POST	
				BP902	*1-508-830-12	H TYPE BASE POST	
				BP951	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
				BP952	*1-535-142-00	(E, Saudi Arabia)...BASE POST 22MM (10MM PITCH) 5P	
				C101	1-162-288-31	(West Germany)...CERAMIC 330PF 10% 50V	
				C102	1-162-282-31	CERAMIC 100PF 10% 50V	
				C103	1-162-282-31	CERAMIC 100PF 10% 50V	
				C104	1-124-925-11	ELECT 2.2MF 20% 50V	
				C105	1-130-473-00	MYLAR 0.0015MF 5% 50V	
				C106	1-130-480-00	MYLAR 0.0056MF 5% 50V	
				C107	1-124-925-11	ELECT 2.2MF 20% 50V	
				C108	1-124-963-11	ELECT 33MF 20% 16V	
				C109	1-162-282-31	CERAMIC 100PF 10% 50V	
				C110	1-162-282-31	CERAMIC 100PF 10% 50V	
				C151	1-162-288-31	(West Germany)...CERAMIC 330PF 10% 50V	
				C152	1-162-282-31	CERAMIC 100PF 10% 50V	
				C153	1-162-282-31	CERAMIC 100PF 10% 50V	
				C154	1-124-925-11	ELECT 2.2MF 20% 50V	
				C155	1-130-473-00	MYLAR 0.0015MF 5% 50V	
				C156	1-130-480-00	MYLAR 0.0056MF 5% 50V	
				C157	1-124-925-11	ELECT 2.2MF 20% 50V	
				C310	1-123-611-00	ELECT 1MF	
				C311	1-161-379-00	CERAMIC 0.01MF	
				C312	1-123-611-00	ELECT 1MF	
				C313	1-161-494-00	CERAMIC 0.022MF	
				C314	1-124-462-00	ELECT 10MF	
				C315	1-124-462-00	ELECT 10MF	
				C316	1-162-282-31	CERAMIC 100PF	
				C317	1-162-282-31	CERAMIC 100PF	
				C318	1-162-215-31	CERAMIC 47PF	
				C319	1-162-215-31	CERAMIC 47PF	
				C322	1-124-462-00	ELECT 10MF	
				C327	1-124-463-00	ELECT 0.1MF	
				C328	1-161-379-00	CERAMIC 0.01MF	
				C329	1-161-379-00	CERAMIC 0.01MF	
				C330	1-161-379-00	CERAMIC 0.01MF	
				C331	1-124-462-00	ELECT 10MF	
				C332	1-162-284-31	CERAMIC 150PF	
				C333	1-162-284-31	CERAMIC 150PF	
				C334	1-123-611-00	ELECT 1MF	
				C335	1-124-462-00	ELECT 10MF	
				C336	1-123-611-00	ELECT 1MF	
				C337	1-124-463-00	ELECT 0.1MF	
				C338	1-123-611-00	ELECT 1MF	
				C339	1-124-463-00	ELECT 0.1MF	

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μ F, PF: μ F.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:
 UA...: μ A..., UPA...: μ PA...,
 UPC...: μ PC, UPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*A-4375-370-A	MOUNTED PCB, CONTROL	C158	1-124-963-11	ELECT 33MF
902	*A-4375-371-A	MOUNTED PCB, GEQ	C159	1-162-282-31	CERAMIC 100PF
903	*A-4388-729-A	MOUNTED PCB, POWER IC	C160	1-162-282-31	CERAMIC 100PF
904	*A-4394-459-A	(West Germany)...MOUNTED PCB, POWER	C221	1-124-925-11	ELECT 2.2MF
	*A-4394-460-A	(E, Saudi Arabia, UK)...MOUNTED PCB, POWER	C222	1-123-611-00	ELECT 1MF
			C223	1-123-875-11	ELECT 10MF
905	Δ 1-506-409-11	(Saudi Arabia)...ADAPTOR, CONVERSION	C224	1-123-611-00	ELECT 1MF
	Δ 1-526-565-00	(E)...AC PLUG ADAPTOR	C225	1-161-379-00	CERAMIC 0.01MF
			C226	1-125-486-11	DOUBLE LAYERS 220MF
906	Δ 1-551-188-XX	(E)...CORD, POWER	C227	1-126-103-11	ELECT 470MF
	Δ 1-555-750-00	(Saudi Arabia, West Germany)...CORD, POWER	C228	1-136-153-00	FILM 0.01MF
	Δ 1-556-035-00	(UK)...CORD, POWER	C229	1-136-153-00	FILM 0.01MF
907	1-533-183-11	HOLDER, FUSE	C301	1-162-294-31	CERAMIC 0.001MF
908	*1-622-153-11	PC BOARD, MICROPHONE	C302	1-162-294-31	CERAMIC 0.001MF
909	*1-622-154-11	PC BOARD, HEADPHONE	C303	1-162-294-31	CERAMIC 0.001MF
910	*1-622-155-11	PC BOARD, LAMP	C304	1-162-294-31	CERAMIC 0.001MF
911	*1-626-124-11	PC BOARD, SPEAKER TERMINAL	C305	1-124-463-00	ELECT 0.1MF
912	*1-626-125-11	PC BOARD, AC FUSE	C306	1-162-282-31	CERAMIC 100PF
913	*1-626-126-11	PC BOARD, POWER SW	C307	1-162-282-31	CERAMIC 100PF
914	*1-626-128-11	PC BOARD, TC CONNECTOR	C308	1-162-294-31	CERAMIC 0.001MF
915	*1-626-129-11	PC BOARD, ST CONNECTOR	C309	1-162-294-31	CERAMIC 0.001MF
BP901	*1-508-830-12	H TYPE BASE POST	C310	1-123-611-00	ELECT 1MF
BP902	*1-508-830-12	H TYPE BASE POST	C311	1-161-379-00	CERAMIC 0.01MF
BP951	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	C312	1-123-611-00	ELECT 1MF
BP952	*1-535-142-00	(E, Saudi Arabia)...BASE POST 22MM (10MM PITCH) 5P	C313	1-161-494-00	CERAMIC 0.022MF
			C314	1-124-462-00	ELECT 10MF
			C315	1-124-462-00	ELECT 10MF
C101	1-162-288-31	(West Germany)...CERAMIC 330PF 10% 50V	C316	1-162-282-31	CERAMIC 100PF
C102	1-162-282-31	CERAMIC 100PF 10% 50V	C317	1-162-282-31	CERAMIC 100PF
C103	1-162-282-31	CERAMIC 100PF 10% 50V	C318	1-162-215-31	CERAMIC 47PF
C104	1-124-925-11	ELECT 2.2MF 20% 50V	C319	1-162-215-31	CERAMIC 47PF
C105	1-130-473-00	MYLAR 0.0015MF 5% 50V	C322	1-124-462-00	ELECT 10MF
C106	1-130-480-00	MYLAR 0.0056MF 5% 50V	C327	1-124-463-00	ELECT 0.1MF
C107	1-124-925-11	ELECT 2.2MF 20% 50V	C328	1-161-379-00	CERAMIC 0.01MF
C108	1-124-963-11	ELECT 33MF 20% 16V	C329	1-161-379-00	CERAMIC 0.01MF
C109	1-162-282-31	CERAMIC 100PF 10% 50V	C330	1-161-379-00	CERAMIC 0.01MF
C110	1-162-282-31	CERAMIC 100PF 10% 50V	C331	1-124-462-00	ELECT 10MF
C151	1-162-288-31	(West Germany)...CERAMIC 330PF 10% 50V	C332	1-162-284-31	CERAMIC 150PF
C152	1-162-282-31	CERAMIC 100PF 10% 50V	C333	1-162-284-31	CERAMIC 150PF
C153	1-162-282-31	CERAMIC 100PF 10% 50V	C334	1-123-611-00	ELECT 1MF
C154	1-124-925-11	ELECT 2.2MF 20% 50V	C335	1-124-462-00	ELECT 10MF
C155	1-130-473-00	MYLAR 0.0015MF 5% 50V	C336	1-123-611-00	ELECT 1MF
C156	1-130-480-00	MYLAR 0.0056MF 5% 50V	C337	1-124-463-00	ELECT 0.1MF
C157	1-124-925-11	ELECT 2.2MF 20% 50V	C338	1-123-611-00	ELECT 1MF
			C339	1-124-463-00	ELECT 0.1MF

SECTION 4

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA..., UPC...: μ PC, UPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-4375-370-A	MOUNTED PCB, CONTROL
902	*A-4375-371-A	MOUNTED PCB, GEQ
903	*A-4388-729-A	MOUNTED PCB, POWER IC
904	*A-4394-459-A	(West Germany)....MOUNTED PCB, POWER
	*A-4394-460-A	(E,Saudi Arabia,UK) ...MOUNTED PCB, POWER
905	Δ 1-506-409-11	(Saudi Arabia)...ADAPTOR, CONVERSION
	Δ 1-526-565-00	(E).....AC PLUG ADAPTOR
906	Δ 1-551-188-XX	(E).....CORD, POWER
	Δ 1-555-750-00	(Saudi Arabia,West Germany) ...CORD, POWER
	Δ 1-556-035-00	(UK).....CORD, POWER
907	1-533-183-11	HOLDER, FUSE
908	*1-622-153-11	PC BOARD, MICROPHONE
909	*1-622-154-11	PC BOARD, HEADPHONE
910	*1-622-155-11	PC BOARD, LAMP
911	*1-626-124-11	PC BOARD, SPEAKER TERMINAL
912	*1-626-125-11	PC BOARD, AC FUSE
913	*1-626-126-11	PC BOARD, POWER SW
914	*1-626-128-11	PC BOARD, TC CONNECTOR
915	*1-626-129-11	PC BOARD, ST CONNECTOR
BP901	*1-508-830-12	H TYPE BASE POST
BP902	*1-508-830-12	H TYPE BASE POST
BP951	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
BP952	*1-535-142-00	(E,Saudi Arabia) ...BASE POST 22MM (10MM PITCH) 5P
C101	1-162-288-31	(West Germany) ...CERAMIC 330PF 10% 50V
C102	1-162-282-31	CERAMIC 100PF 10% 50V
C103	1-162-282-31	CERAMIC 100PF 10% 50V
C104	1-124-925-11	ELECT 2.2MF 20% 50V
C105	1-130-473-00	MYLAR 0.0015MF 5% 50V
C106	1-130-480-00	MYLAR 0.0056MF 5% 50V
C107	1-124-925-11	ELECT 2.2MF 20% 50V
C108	1-124-963-11	ELECT 33MF 20% 16V
C109	1-162-282-31	CERAMIC 100PF 10% 50V
C110	1-162-282-31	CERAMIC 100PF 10% 50V
C151	1-162-288-31	(West Germany) ...CERAMIC 330PF 10% 50V
C152	1-162-282-31	CERAMIC 100PF 10% 50V
C153	1-162-282-31	CERAMIC 100PF 10% 50V
C154	1-124-925-11	ELECT 2.2MF 20% 50V
C155	1-130-473-00	MYLAR 0.0015MF 5% 50V
C156	1-130-480-00	MYLAR 0.0056MF 5% 50V
C157	1-124-925-11	ELECT 2.2MF 20% 50V

Remarks(GE PRESET)
(GE PRESET)(GE PRESET)
(GE PRESET)(GE PRESET)
(GE PRESET)(DOL) (SAT)
(DOL) (DBFB)

Ref.No.	Part No.	Description
C158	1-124-963-11	ELECT 33MF 20% 16V
C159	1-162-282-31	CERAMIC 100PF 10% 50V
C160	1-162-282-31	CERAMIC 100PF 10% 50V
C221	1-124-925-11	ELECT 2.2MF 20% 50V
C222	1-123-611-00	ELECT 1MF 20% 50V
C223	1-123-875-11	ELECT 10MF 20% 50V
C224	1-123-611-00	ELECT 1MF 20% 50V
C225	1-161-379-00	CERAMIC 0.01MF 30% 16V
C226	1-125-486-11	DOUBLE LAYERS 220MF 5.5V
C227	1-126-103-11	ELECT 470MF 20% 16V
C228	1-136-153-00	FILM 0.01MF 5% 50V
C229	1-136-153-00	FILM 0.01MF 5% 50V
C301	1-162-294-31	CERAMIC 0.001MF 10% 50V
C302	1-162-294-31	CERAMIC 0.001MF 10% 50V
C303	1-162-294-31	CERAMIC 0.001MF 10% 50V
C304	1-162-294-31	CERAMIC 0.001MF 10% 50V
C305	1-124-463-00	ELECT 0.1MF 20% 50V
C306	1-162-282-31	CERAMIC 100PF 10% 50V
C307	1-162-282-31	CERAMIC 100PF 10% 50V
C308	1-162-294-31	CERAMIC 0.001MF 10% 50V
C309	1-162-294-31	CERAMIC 0.001MF 10% 50V
C310	1-123-611-00	ELECT 1MF 20% 50V
C311	1-161-379-00	CERAMIC 0.01MF 30% 16V
C312	1-123-611-00	ELECT 1MF 20% 50V
C313	1-161-494-00	CERAMIC 0.022MF 25V
C314	1-124-462-00	ELECT 10MF 20% 16V
C315	1-124-462-00	ELECT 10MF 20% 16V
C316	1-162-282-31	CERAMIC 100PF 10% 50V
C317	1-162-282-31	CERAMIC 100PF 10% 50V
C318	1-162-215-31	CERAMIC 47PF 5% 50V
C319	1-162-215-31	CERAMIC 47PF 5% 50V
C322	1-124-462-00	ELECT 10MF 20% 16V
C327	1-124-463-00	ELECT 0.1MF 20% 50V
C328	1-161-379-00	CERAMIC 0.01MF 30% 16V
C329	1-161-379-00	CERAMIC 0.01MF 30% 16V
C330	1-161-379-00	CERAMIC 0.01MF 30% 16V
C331	1-124-462-00	ELECT 10MF 20% 16V
C332	1-162-284-31	CERAMIC 150PF 10% 50V
C333	1-162-284-31	CERAMIC 150PF 10% 50V
C334	1-123-611-00	ELECT 1MF 20% 50V
C335	1-124-462-00	ELECT 10MF 20% 16V
C336	1-123-611-00	ELECT 1MF 20% 50V
C337	1-124-463-00	ELECT 0.1MF 20% 50V
C338	1-123-611-00	ELECT 1MF 20% 50V
C339	1-124-463-00	ELECT 0.1MF 20% 50V

Ref.No.	Part No.	Description
C340	1-162-294-31	CERAMIC 0.001MF 10% 50V
C345	1-161-379-00	CERAMIC 0.01MF 30% 16V
C401	1-162-282-31	CERAMIC 100PF 10% 50V
C402	1-123-611-00	ELECT 1MF 20% 50V
C403	1-123-611-00	ELECT 1MF 20% 50V
C405	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C406	1-162-294-31	CERAMIC 0.001MF 10% 50V
C407	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C408	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C409	1-136-155-00	FILM 0.015MF 5% 50V
C410	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C411	1-136-159-00	FILM 0.033MF 5% 50V
C412	1-136-155-00	FILM 0.015MF 5% 50V
C413	1-136-163-00	FILM 0.068MF 5% 50V
C414	1-136-159-00	FILM 0.033MF 5% 50V
C415	1-124-464-11	ELECT 0.22MF 20% 50V
C416	1-136-163-00	FILM 0.068MF 5% 50V
C417	1-123-611-00	ELECT 1MF 20% 50V
C418	1-124-463-00	ELECT 0.1MF 20% 50V
C419	1-124-462-00	ELECT 10MF 20% 16V
C420	1-123-611-00	ELECT 1MF 20% 50V
C421	1-162-282-31	CERAMIC 100PF 10% 50V
C448	1-162-282-31	(West Germany) ...CERAMIC 100PF 10% 50V
C451	1-162-282-31	CERAMIC 100PF 10% 50V
C452	1-123-611-00	ELECT 1MF 20% 50V
C453	1-123-611-00	ELECT 1MF 20% 50V
C455	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C456	1-162-294-31	CERAMIC 0.001MF 10% 50V
C457	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C458	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C459	1-136-155-00	FILM 0.015MF 5% 50V
C460	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C461	1-136-159-00	FILM 0.033MF 5% 50V
C462	1-136-155-00	FILM 0.015MF 5% 50V
C463	1-136-163-00	FILM 0.068MF 5% 50V
C464	1-136-159-00	FILM 0.033MF 5% 50V
C465	1-124-464-11	ELECT 0.22MF 20% 50V
C466	1-136-163-00	FILM 0.068MF 5% 50V
C467	1-123-611-00	ELECT 1MF 20% 50V
C468	1-124-463-00	ELECT 0.1MF 20% 50V
C469	1-124-462-00	ELECT 10MF 20% 16V
C470	1-123-611-00	ELECT 1MF 20% 50V
C471	1-162-282-31	CERAMIC 100PF 10% 50V
C498	1-162-282-31	(West Germany) ...CERAMIC 100PF 10% 50V
C501	1-124-462-00	ELECT 10MF 20% 16V
C502	1-124-462-00	ELECT 10MF 20% 16V
C503	1-124-234-00	ELECT 22MF 20% 16V
C504	1-124-234-00	ELECT 22MF 20% 16V
C505	1-124-236-00	ELECT 47MF 20% 16V
C506	1-124-462-00	ELECT 10MF 20% 16V
C507	1-124-462-00	ELECT 10MF 20% 16V
C508	1-124-463-00	ELECT 0.1MF 20% 50V
C509	1-124-465-00	ELECT 0.47MF 20% 50V
C510	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C511	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C512	1-136-163-00	FILM 0.068MF 5% 50V

Ref.No.	Part No.	Description
C513	1-124-463-00	ELECT 0.1MF 20% 50V
C514	1-136-159-00	FILM 0.033MF 5% 50V
C515	1-124-463-00	ELECT 0.1MF 20% 50V
C516	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C517	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C518	1-124-465-00	ELECT 0.47MF 20% 50V
C519	1-162-292-31	CERAMIC 680PF 10% 50V
C520	1-162-292-31	CERAMIC 680PF 10% 50V
C521	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C522	1-124-464-11	ELECT 0.22MF 20% 50V
C523	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C524	1-124-464-11	ELECT 0.22MF 20% 50V
C525	1-162-294-31	CERAMIC 0.001MF 10% 50V
C526	1-124-465-00	ELECT 0.47MF 20% 50V
C527	1-162-288-31	CERAMIC 330PF 10% 50V
C528	1-161-379-00	CERAMIC 0.01MF 30% 16V
C529	1-124-234-00	ELECT 22MF 20% 16V
C530	1-124-462-00	ELECT 10MF 20% 16V
C531	1-124-462-00	ELECT 10MF 20% 16V
C532	1-124-462-00	ELECT 10MF 20% 16V
C551	1-162-294-31	CERAMIC 0.001MF 10% 50V
C552	1-162-294-31	CERAMIC 0.001MF 10% 50V
C553	1-162-294-31	CERAMIC 0.001MF 10% 50V
C601	1-136-165-00	FILM 0.1MF 5% 50V
C602	1-136-165-00	FILM 0.1MF 5% 50V
C603	1-123-611-00	ELECT 1MF 20% 50V
C604	1-124-462-00	ELECT 10MF 20% 16V
C605	1-162-282-31	CERAMIC 100PF 10% 50V
C606	1-162-288-31	CERAMIC 330PF 10% 50V
C610	1-124-963-11	ELECT 33MF 20% 16V
C611	1-124-598-11	ELECT 22MF 20% 25V
C612	1-124-463-00	ELECT 0.1MF 20% 50V
C621	1-123-611-00	ELECT 1MF 20% 50V
C622	1-162-282-31	CERAMIC 100PF 10% 50V
C623	1-162-282-31	CERAMIC 100PF 10% 50V
C624	1-124-122-11	ELECT 100MF 20% 50V
C625	1-124-910-11	ELECT 47MF 20% 50V
C626	1-136-165-00	FILM 0.1MF 5% 50V
C628	1-136-165-00	(West Germany)...FILM 0.1MF 5% 50V
C630	1-123-875-11	ELECT 10MF 20% 50V
C631	1-124-122-11	ELECT 100MF 20% 50V
C632	1-123-875-11	ELECT 10MF 20% 50V
C651	1-136-165-00	FILM 0.1MF 5% 50V
C652	1-136-165-00	FILM 0.1MF 5% 50V
C653	1-123-611-00	ELECT 1MF 20% 50V
C654	1-124-462-00	ELECT 10MF 20% 16V
C655	1-162-282-31	CERAMIC 100PF 10% 50V
C656	1-162-288-31	CERAMIC 330PF 10% 50V
C671	1-123-611-00	ELECT 1MF 20% 50V
C672	1-162-282-31	CERAMIC 100PF 10% 50V
C673	1-162-282-31	CERAMIC 100PF 10% 50V
C674	1-124-122-11	ELECT 100MF 20% 50V
C675	1-124-910-11	ELECT 47MF 20% 50V
C676	1-136-165-00	FILM 0.1MF 5% 50V
C678	1-136-165-00	(West Germany)...FILM 0.1MF 5% 50V
C701	1-124-245-00	ELECT 4.7MF 20% 35V
C702	1-124-120-11	ELECT 220MF 20% 16V

Ref.No.	Part No.	Description			
C703	1-124-120-11	ELECT	220MF	20%	16V
C704	1-161-379-00	CERAMIC	0.01MF	30%	16V
C705	1-161-494-00	CERAMIC	0.022MF		25V
C706	1-124-910-11	ELECT	47MF	20%	50V
C751	1-124-245-00	ELECT	4.7MF	20%	35V
C901	1-126-224-11	ELECT	4700MF	20%	42V
C902	1-126-224-11	ELECT	4700MF	20%	42V
C903	1-124-927-11	ELECT	4.7MF	20%	50V
C904	1-136-165-00	FILM	0.1MF	5%	50V
C905	1-136-165-00	FILM	0.1MF	5%	50V
C906	1-126-103-11	ELECT	470MF	20%	16V
C907	1-123-875-11	ELECT	10MF	20%	50V
C908	1-124-563-11	ELECT	2200MF	20%	25V
C909	1-124-563-11	ELECT	2200MF	20%	25V
C910	1-136-153-00	FILM	0.01MF	5%	50V
C911	1-136-153-00	FILM	0.01MF	5%	50V
C912	1-101-006-00	CERAMIC	0.047MF		50V
C913	1-101-006-00	(West Germany) ...CERAMIC	0.047MF		50V
C951	1-124-499-11	ELECT	1MF	20%	50V
C952	1-124-499-11	ELECT	1MF	20%	50V
C953	1-162-294-31	CERAMIC	0.001MF	10%	50V
C954	1-124-927-11	ELECT	4.7MF	20%	50V
C955	1-124-910-11	ELECT	47MF	20%	50V
C956	1-124-360-00	ELECT	1000MF	20%	16V
C957	1-123-875-11	ELECT	10MF	20%	50V
C958	▲ 1-162-578-00	CERAMIC	0.0047MF	20%	400V
C959	1-136-153-00	FILM	0.01MF	5%	50V
C960	1-124-908-11	ELECT	22MF	20%	50V
CN101	*1-566-858-11	SOCKET, CONNECTOR 11P			
CN102	1-564-610-21	CONNECTOR, BOARD TO BOARD			
CN103	*1-565-291-11	SOCKET, CONNECTOR 13P			
CN104	*1-506-979-21	CONNECTOR, BOARD TO BOARD 13P			
CN201	*1-564-499-11	PIN, CONNECTOR 6P			
CN202	*1-564-501-11	PIN, CONNECTOR 8P			
CN203	*1-564-500-11	PIN, CONNECTOR 7P			
CN401	*1-564-501-11	PIN, CONNECTOR 8P			
CN403	*1-564-501-11	PIN, CONNECTOR 8P			
CN405	*1-564-495-11	PIN, CONNECTOR 2P			
CN601	*1-564-497-11	PIN, CONNECTOR 4P			
CN602	*1-564-521-11	PLUG, CONNECTOR 6P			
CN603	*1-564-517-11	PLUG, CONNECTOR 2P			
CN604	*1-564-520-11	PLUG, CONNECTOR 5P			
CN651	*1-562-249-00	SOCKET, CONNECTOR 4P			
CN652	*1-564-337-00	PIN, CONNECTOR 3P			
CN691	1-564-980-11	PIN, CONNECTOR 4P			
CN801	*1-564-495-11	PIN, CONNECTOR 2P			
CN901	*1-564-517-21	PLUG, CONNECTOR 2P			
CN951	*1-564-340-00	PIN, CONNECTOR 6P			
CN952	*1-564-337-00	PIN, CONNECTOR 3P			
D201	8-719-000-26	DIODE US1060M			
D202	8-719-000-26	DIODE US1060M			
D203	8-719-000-26	DIODE US1060M			
D204	8-719-000-26	DIODE US1060M			
D205	8-719-000-26	DIODE US1060M			
D206	8-719-000-26	DIODE US1060M			
D207	8-719-000-26	DIODE US1060M			
D301	8-719-000-26	DIODE US1060M			
D303	8-719-000-26	DIODE US1060M			

Ref.No.	Part No.	Description
D304	8-719-000-26	DIODE US1060M
D305	8-719-000-26	DIODE US1060M
D306	8-719-000-26	DIODE US1060M
D307	8-719-000-26	DIODE US1060M
D308	8-719-000-26	DIODE US1060M
D309	8-719-000-26	DIODE US1060M
D310	8-719-000-26	DIODE US1060M
D311	8-719-000-26	DIODE US1060M
D313	8-719-301-60	DIODE SEL2910A-C
D314	8-719-301-60	DIODE SEL2910A-C
D315	8-719-301-60	DIODE SEL2910A-C
D316	8-719-301-60	DIODE SEL2910A-C
D317	8-719-301-60	DIODE SEL2910A-C
D318	8-719-301-60	DIODE SEL2910A-C
D319	8-719-301-48	DIODE SEL2413E-D
D320	8-719-301-48	DIODE SEL2413E-D
D321	8-719-301-48	DIODE SEL2413E-D
D322	8-719-301-48	DIODE SEL2413E-D
D323	8-719-000-63	DIODE UZL6M3
D324	8-719-302-87	DIODE SEL2913K-C
D325	8-719-000-26	DIODE US1060M
D501	8-719-000-26	DIODE US1060M
D502	8-719-000-26	DIODE US1060M
D503	8-719-000-26	DIODE US1060M
D504	8-719-000-26	DIODE US1060M
D505	8-719-000-26	DIODE US1060M
D506	8-719-000-26	DIODE US1060M
D507	8-719-000-26	DIODE US1060M
D508	8-719-000-26	DIODE US1060M
D509	8-719-000-26	DIODE US1060M
D510	8-719-000-26	DIODE US1060M
D511	8-719-109-79	DIODE RD4.7ES-B
D601	8-719-000-26	DIODE US1060M
D651	8-719-000-26	DIODE US1060M
D701	8-719-000-26	DIODE US1060M
D901	8-719-302-38	DIODE RBV-602-01
D902	8-719-000-26	DIODE US1060M
D903	8-719-200-02	DIODE 10E2
D904	8-719-200-02	DIODE 10E2
D905	8-719-200-02	DIODE 10E2
D906	8-719-200-02	DIODE 10E2
D907	8-719-000-26	DIODE US1060M
D908	8-719-000-26	DIODE US1060M
D909	8-719-000-26	DIODE US1060M
D910	8-719-000-26	DIODE US1060M
D951	8-719-200-02	DIODE 10E2
D952	8-719-200-02	DIODE 10E2
D953	8-719-200-02	DIODE 10E2
D954	8-719-200-02	DIODE 10E2
D955	8-719-000-26	DIODE US1060M
D956	8-719-000-26	DIODE US1060M
D957	8-719-000-26	DIODE US1060M
D958	8-719-000-26	DIODE US1060M
D959	8-719-000-26	DIODE US1060M
D960	8-719-301-38	DIODE SEL2210S-C
D961	8-719-000-26	DIODE US1060M
D962	8-719-000-26	DIODE US1060M

Note: The components identified by mark ▲ or dotted line with mark ▲ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
DP101	*1-562-251-00	SOCKET, CONNECTOR 6P
F951	△ 1-532-285-00	FUSE, TIME-LAG
F952	△ 1-532-285-00	(E,Saudi Arabia)...FUSE, TIME-LAG
IC101	8-759-600-02	IC M5218L
IC102	8-759-800-33	IC LC7815H
IC301	8-759-804-48	IC LC7060AN
IC302	8-759-600-02	IC M5218L
IC303	8-759-602-60	IC M50765-440SP
IC401	8-759-600-02	IC M5218L
IC402	8-759-804-49	IC LC7522
IC403	8-759-113-18	IC UPC4574C
IC404	8-759-805-12	IC LC7560B
IC405	8-759-204-30	IC TC9176P
IC601	8-759-600-02	IC M5218L
IC602	8-749-941-52	IC STK415211
IC701	8-759-111-68	IC UPC1237HA
IC901	8-759-604-84	IC M5F7806
IC902	8-759-604-32	IC M5F7810
IC903	8-759-604-50	IC M5F7910
IC951	8-759-820-50	IC LC6528C-3649
IC952	8-759-604-84	IC M5F7806
ICP101	1-532-841-21	LINK, IC
ICP901	1-532-846-21	LINK, IC
ICP902	1-532-846-21	LINK, IC
J101	1-507-908-11	JACK, PIN 4P
J801	1-507-974-11	JACK
J851	1-563-951-11	JACK
L501	1-410-564-41	INDUCTOR 100UH
L601	1-410-397-21	(West Germany) ...FERRITE BEAD INDUCTOR 1.1UH
L651	1-410-397-21	(West Germany) ...FERRITE BEAD INDUCTOR 1.1UH
L951	1-410-564-21	INDUCTOR 100UH
LCD1	1-807-813-11	DISPLAY PANEL, LIQUID CRYSTAL
PL401	1-518-527-51	LAMP, PILOT
PL402	1-518-527-51	LAMP, PILOT
Q301	8-729-117-54	TRANSISTOR 2SA1175
Q302	8-729-117-54	TRANSISTOR 2SA1175
Q303	8-729-117-54	TRANSISTOR 2SA1175
Q304	8-729-117-54	TRANSISTOR 2SA1175
Q305	8-729-117-54	TRANSISTOR 2SA1175
Q306	8-729-117-54	TRANSISTOR 2SA1175
Q307	8-729-600-27	TRANSISTOR 2SC634SP
Q308	8-729-600-27	TRANSISTOR 2SC634SP
Q401	8-729-600-27	TRANSISTOR 2SC634SP
Q402	8-729-600-27	TRANSISTOR 2SC634SP
Q403	8-729-600-27	TRANSISTOR 2SC634SP
Q404	8-729-600-27	TRANSISTOR 2SC634SP
Q405	8-729-600-27	TRANSISTOR 2SC634SP
Q406	8-729-600-27	TRANSISTOR 2SC634SP
Q407	8-729-600-27	TRANSISTOR 2SC634SP
Q408	8-729-600-08	TRANSISTOR 2SK381-E
Q409	8-729-600-27	TRANSISTOR 2SC634SP
Q410	8-729-117-54	TRANSISTOR 2SA1175
Q451	8-729-600-27	TRANSISTOR 2SC634SP
Q452	8-729-600-27	TRANSISTOR 2SC634SP
Q453	8-729-600-27	TRANSISTOR 2SC634SP

Ref.No.	Part No.	Description
Q454	8-729-600-27	TRANSISTOR 2SC634SP
Q455	8-729-600-27	TRANSISTOR 2SC634SP
Q456	8-729-600-27	TRANSISTOR 2SC634SP
Q457	8-729-600-27	TRANSISTOR 2SC634SP
Q458	8-729-600-08	TRANSISTOR 2SK381-E
Q459	8-729-600-27	TRANSISTOR 2SC634SP
Q601	8-729-600-27	TRANSISTOR 2SC634SP
Q651	8-729-600-27	TRANSISTOR 2SC634SP
Q691	8-729-117-54	TRANSISTOR 2SA1175
Q701	8-729-108-05	TRANSISTOR 2SC1841-PA
Q702	8-729-117-54	TRANSISTOR 2SA1175
Q751	8-729-108-05	TRANSISTOR 2SC1841-PA
Q951	8-729-115-15	TRANSISTOR BN1A4M
Q952	8-729-600-27	TRANSISTOR 2SC634SP
Q953	8-729-801-83	TRANSISTOR 2SB1013
Q954	8-729-117-54	TRANSISTOR 2SA1175
R101	1-249-417-11	CARBON 1K 5% 1/4W
R102	1-249-417-11	CARBON 1K 5% 1/4W
R103	1-249-438-11	CARBON 56K 5% 1/4W
R104	1-249-418-11	CARBON 1.2K 5% 1/4W
R105	1-249-437-11	CARBON 47K 5% 1/4W
R106	1-215-487-00	CARBON 560K 5% 1/4W
R107	1-249-421-11	CARBON 2.2K 5% 1/4W
R108	1-249-411-11	CARBON 330 5% 1/4W
R109	1-249-433-11	CARBON 22K 5% 1/4W
R151	1-249-417-11	CARBON 1K 5% 1/4W
R152	1-249-417-11	CARBON 1K 5% 1/4W
R153	1-249-438-11	CARBON 56K 5% 1/4W
R154	1-249-418-11	CARBON 1.2K 5% 1/4W
R155	1-249-437-11	CARBON 47K 5% 1/4W
R156	1-215-487-00	CARBON 560K 5% 1/4W
R157	1-249-421-11	CARBON 2.2K 5% 1/4W
R158	1-249-411-11	CARBON 330 5% 1/4W
R159	1-249-433-11	CARBON 22K 5% 1/4W
R201	1-247-891-00	CARBON 330K 5% 1/4W
R202	1-247-891-00	CARBON 330K 5% 1/4W
R203	1-249-429-11	CARBON 10K 5% 1/4W
R204	1-247-891-00	CARBON 330K 5% 1/4W
R206	1-249-417-11	CARBON 1K 5% 1/4W
R207	1-249-428-11	CARBON 8.2K 5% 1/4W
R208	1-249-417-11	CARBON 1K 5% 1/4W
R209	1-249-425-11	CARBON 4.7K 5% 1/4W
R210	1-249-405-11	CARBON 100 5% 1/4W
R211	1-249-437-11	CARBON 47K 5% 1/4W
R221	1-249-441-11	CARBON 100K 5% 1/4W
R222	1-249-417-11	CARBON 1K 5% 1/4W
R223	1-247-895-00	CARBON 470K 5% 1/4W
R224	1-247-895-00	CARBON 470K 5% 1/4W
R225	1-247-891-00	CARBON 330K 5% 1/4W
R251	1-247-891-00	CARBON 330K 5% 1/4W
R252	1-247-891-00	CARBON 330K 5% 1/4W
R253	1-249-429-11	CARBON 10K 5% 1/4W
R254	1-247-891-00	CARBON 330K 5% 1/4W
R256	1-249-417-11	CARBON 1K 5% 1/4W
R257	1-249-428-11	CARBON 8.2K 5% 1/4W
R258	1-249-417-11	CARBON 1K 5% 1/4W
R259	1-249-425-11	CARBON 4.7K 5% 1/4W
R291	1-249-429-11	CARBON 10K 5% 1/4W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
R301	1-249-429-11	CARBON	10K	5%	1/4W
R302	1-249-429-11	CARBON	10K	5%	1/4W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-247-891-00	CARBON	330K	5%	1/4W
R306	1-247-903-00	CARBON	1M	5%	1/4W
R307	1-249-425-11	CARBON	4.7K	5%	1/4W
R308	1-249-429-11	CARBON	10K	5%	1/4W
R309	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-441-11	CARBON	100K	5%	1/4W
R317	1-249-441-11	CARBON	100K	5%	1/4W
R318	1-249-441-11	CARBON	100K	5%	1/4W
R319	1-249-441-11	CARBON	100K	5%	1/4W
R320	1-249-417-11	CARBON	1K	5%	1/4W
R321	1-249-417-11	CARBON	1K	5%	1/4W
R322	1-249-417-11	CARBON	1K	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W
R324	1-249-414-11	CARBON	560	5%	1/4W
R325	1-249-429-11	CARBON	10K	5%	1/4W
R326	1-249-429-11	CARBON	10K	5%	1/4W
R327	1-249-429-11	CARBON	10K	5%	1/4W
R328	1-249-429-11	CARBON	10K	5%	1/4W
R329	1-249-423-11	CARBON	3.3K	5%	1/4W
R330	1-249-423-11	CARBON	3.3K	5%	1/4W
R331	1-249-423-11	CARBON	3.3K	5%	1/4W
R332	1-249-423-11	CARBON	3.3K	5%	1/4W
R333	1-249-429-11	CARBON	10K	5%	1/4W
R334	1-249-429-11	CARBON	10K	5%	1/4W
R335	1-249-429-11	CARBON	10K	5%	1/4W
R336	1-249-429-11	CARBON	10K	5%	1/4W
R337	1-249-429-11	CARBON	10K	5%	1/4W
R338	1-249-415-11	CARBON	680	5%	1/4W
R339	1-249-433-11	CARBON	22K	5%	1/4W
R340	1-249-441-11	CARBON	100K	5%	1/4W
R341	1-249-425-11	CARBON	4.7K	5%	1/4W
R342	1-249-429-11	CARBON	10K	5%	1/4W
R343	1-249-417-11	CARBON	1K	5%	1/4W
R344	1-249-434-11	CARBON	27K	5%	1/4W
R345	1-249-434-11	CARBON	27K	5%	1/4W
R346	1-249-426-11	CARBON	5.6K	5%	1/4W
R347	1-249-426-11	CARBON	5.6K	5%	1/4W
R348	1-249-438-11	CARBON	56K	5%	1/4W
R349	1-249-438-11	CARBON	56K	5%	1/4W
R349	1-249-409-11	CARBON	220	5%	1/4W
R353	1-249-409-11	CARBON	220	5%	1/4W
R355	1-249-429-11	CARBON	10K	5%	1/4W
R356	1-249-429-11	CARBON	10K	5%	1/4W
R357	1-249-429-11	CARBON	10K	5%	1/4W
R358	1-249-429-11	CARBON	10K	5%	1/4W
R359	1-249-429-11	CARBON	10K	5%	1/4W
R360	1-249-429-11	CARBON	10K	5%	1/4W
R361	1-249-429-11	CARBON	10K	5%	1/4W
R362	1-249-429-11	CARBON	10K	5%	1/4W
R363	1-249-429-11	CARBON	10K	5%	1/4W
R364	1-249-429-11	CARBON	10K	5%	1/4W
R365	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No.	Part No.	Description			
R366	1-249-410-11	CARBON	270	5%	1/4W
R367	1-249-441-11	CARBON	100K	5%	1/4W
R368	1-249-423-11	CARBON	3.3K	5%	1/4W
R369	1-247-903-00	CARBON	1M	5%	1/4W
R371	1-249-429-11	CARBON	10K	5%	1/4W
R372	1-249-429-11	CARBON	10K	5%	1/4W
R373	1-249-425-11	CARBON	4.7K	5%	1/4W
R374	1-249-409-11	CARBON	220	5%	1/4W
R375	1-249-441-11	CARBON	100K	5%	1/4W
R376	1-249-429-11	CARBON	10K	5%	1/4W
R377	1-249-410-11	CARBON	270	5%	1/4W
R378	1-249-410-11	CARBON	270	5%	1/4W
R379	1-249-410-11	CARBON	270	5%	1/4W
R380	1-249-410-11	CARBON	270	5%	1/4W
R381	1-249-410-11	CARBON	270	5%	1/4W
R382	1-249-417-11	CARBON	1K	5%	1/4W
R383	1-249-441-11	CARBON	100K	5%	1/4W
R384	1-249-429-11	CARBON	10K	5%	1/4W
R385	1-249-429-11	CARBON	10K	5%	1/4W
R386	1-249-429-11	CARBON	10K	5%	1/4W
R388	1-247-903-00	CARBON	1M	5%	1/4W
R401	1-249-429-11	CARBON	10K	5%	1/4W
R402	1-247-903-00	CARBON	1M	5%	1/4W
R403	1-249-429-11	CARBON	10K	5%	1/4W
R405	1-249-430-11	CARBON	12K	5%	1/4W
R406	1-249-416-11	CARBON	820	5%	1/4W
R407	1-249-441-11	CARBON	100K	5%	1/4W
R408	1-247-903-00	CARBON	1M	5%	1/4W
R409	1-247-895-00	CARBON	470K	5%	1/4W
R410	1-247-895-00	CARBON	470K	5%	1/4W
R411	1-249-430-11	CARBON	12K	5%	1/4W
R412	1-249-416-11	CARBON	820	5%	1/4W
R413	1-249-441-11	CARBON	100K	5%	1/4W
R414	1-247-903-00	CARBON	1M	5%	1/4W
R415	1-249-430-11	CARBON	12K	5%	1/4W
R416	1-249-413-11	CARBON	470	5%	1/4W
R417	1-249-441-11	CARBON	100K	5%	1/4W
R418	1-247-903-00	CARBON	1M	5%	1/4W
R419	1-249-430-11	CARBON	12K	5%	1/4W
R420	1-249-414-11	CARBON	560	5%	1/4W
R421	1-249-441-11	CARBON	100K	5%	1/4W
R422	1-247-903-00	CARBON	1M	5%	1/4W
R423	1-249-430-11	CARBON	12K	5%	1/4W
R424	1-249-415-11	CARBON	680	5%	1/4W
R425	1-249-441-11	CARBON	100K	5%	1/4W
R426	1-247-903-00	CARBON	1M	5%	1/4W
R427	1-249-430-11	CARBON	12K	5%	1/4W
R428	1-249-415-11	CARBON	680	5%	1/4W
R429	1-249-441-11	CARBON	100K	5%	1/4W
R430	1-247-903-00	CARBON	1M	5%	1/4W
R431	1-249-430-11	CARBON	12K	5%	1/4W
R432	1-249-415-11	CARBON	680	5%	1/4W
R433	1-249-441-11	CARBON	100K	5%	1/4W
R434	1-247-895-00	CARBON	470K	5%	1/4W
R435	1-247-895-00	CARBON	470K	5%	1/4W
R436	1-247-895-00	CARBON	470K	5%	1/4W
R437	1-247-903-00	CARBON	1M	5%	1/4W

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R438	1-249-421-11	CARBON	2.2K	5%	1/4W	R516	1-247-903-00	CARBON	1M	5%	1/4W
R439	1-247-887-00	CARBON	220K	5%	1/4W	R517	1-249-430-11	CARBON	12K	5%	1/4W
R440	1-249-435-11	CARBON	33K	5%	1/4W	R518	1-247-903-00	CARBON	1M	5%	1/4W
R441	1-249-425-11	CARBON	4.7K	5%	1/4W	R519	1-249-438-11	CARBON	56K	5%	1/4W
R451	1-249-429-11	CARBON	10K	5%	1/4W	R520	1-249-424-11	CARBON	3.9K	5%	1/4W
R452	1-247-903-00	CARBON	1M	5%	1/4W	R521	1-247-883-00	CARBON	150K	5%	1/4W
R453	1-249-429-11	CARBON	10K	5%	1/4W	R522	1-249-409-11	CARBON	220	5%	1/4W
R455	1-249-430-11	CARBON	12K	5%	1/4W	R523	1-247-903-00	CARBON	1M	5%	1/4W
R456	1-249-416-11	CARBON	820	5%	1/4W	R524	1-249-436-11	CARBON	39K	5%	1/4W
R457	1-249-441-11	CARBON	100K	5%	1/4W	R525	1-249-432-11	CARBON	18K	5%	1/4W
R458	1-247-903-00	CARBON	1M	5%	1/4W	R526	1-247-889-00	CARBON	270K	5%	1/4W
R459	1-247-895-00	CARBON	470K	5%	1/4W	R527	1-249-431-11	CARBON	15K	5%	1/4W
R460	1-247-895-00	CARBON	470K	5%	1/4W	R528	1-247-903-00	CARBON	1M	5%	1/4W
R461	1-249-430-11	CARBON	12K	5%	1/4W	R529	1-249-429-11	CARBON	10K	5%	1/4W
R462	1-249-416-11	CARBON	820	5%	1/4W	R530	1-247-903-00	CARBON	1M	5%	1/4W
R463	1-249-441-11	CARBON	100K	5%	1/4W	R531	1-249-432-11	CARBON	18K	5%	1/4W
R464	1-247-903-00	CARBON	1M	5%	1/4W	R532	1-247-903-00	CARBON	1M	5%	1/4W
R465	1-249-430-11	CARBON	12K	5%	1/4W	R535	1-247-903-00	CARBON	1M	5%	1/4W
R466	1-249-413-11	CARBON	470	5%	1/4W	R536	1-247-891-00	CARBON	330K	5%	1/4W
R467	1-249-441-11	CARBON	100K	5%	1/4W	R537	1-247-903-00	CARBON	1M	5%	1/4W
R468	1-247-903-00	CARBON	1M	5%	1/4W	R538	1-247-887-00	CARBON	220K	5%	1/4W
R469	1-249-430-11	CARBON	12K	5%	1/4W	R544	1-249-411-11	CARBON	330	5%	1/4W
R470	1-249-414-11	CARBON	560	5%	1/4W	R551	1-249-426-11	CARBON	5.6K	5%	1/4W
R471	1-249-441-11	CARBON	100K	5%	1/4W	R601	1-249-431-11	CARBON	15K	5%	1/4W
R472	1-247-903-00	CARBON	1M	5%	1/4W	R602	1-249-421-11	CARBON	2.2K	5%	1/4W
R473	1-249-430-11	CARBON	12K	5%	1/4W	R603	1-247-895-00	CARBON	470K	5%	1/4W
R474	1-249-415-11	CARBON	680	5%	1/4W	R604	1-249-421-11	CARBON	2.2K	5%	1/4W
R475	1-249-441-11	CARBON	100K	5%	1/4W	R605	1-249-425-11	CARBON	4.7K	5%	1/4W
R476	1-247-903-00	CARBON	1M	5%	1/4W	R606	1-247-903-00	CARBON	1M	5%	1/4W
R477	1-249-430-11	CARBON	12K	5%	1/4W	R607	1-249-429-11	CARBON	10K	5%	1/4W
R478	1-249-415-11	CARBON	680	5%	1/4W	R608	1-249-429-11	CARBON	10K	5%	1/4W
R479	1-249-441-11	CARBON	100K	5%	1/4W	R619	1-249-417-11	CARBON	1K	5%	1/4W
R480	1-247-903-00	CARBON	1M	5%	1/4W	R620	1-249-417-11	CARBON	1K	5%	1/4W
R481	1-249-430-11	CARBON	12K	5%	1/4W	R621	1-249-414-11	CARBON	560	5%	1/4W
R482	1-249-415-11	CARBON	680	5%	1/4W	R622	1-249-441-11	CARBON	100K	5%	1/4W
R483	1-249-441-11	CARBON	100K	5%	1/4W	R623	1-247-903-00	CARBON	1M	5%	1/4W
R484	1-247-895-00	CARBON	470K	5%	1/4W	R624	1-249-429-11	CARBON	10K	5%	1/4W
R485	1-247-895-00	CARBON	470K	5%	1/4W	R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R486	1-247-895-00	CARBON	470K	5%	1/4W	R632	1-249-438-11	CARBON	56K	5%	1/4W
R487	1-247-903-00	CARBON	1M	5%	1/4W	R633	1-249-438-11	CARBON	56K	5%	1/4W
R488	1-249-421-11	CARBON	2.2K	5%	1/4W	R634	1-249-414-11	CARBON	560	5%	1/4W
R489	1-247-887-00	CARBON	220K	5%	1/4W	R635	1-247-756-11	CARBON	2.2K	5%	1/2W
R490	1-249-435-11	CARBON	33K	5%	1/4W	R636	1-247-756-11	CARBON	2.2K	5%	1/2W
R491	1-249-425-11	CARBON	4.7K	5%	1/4W	R637	1-247-727-11	CARBON	10	5%	1/2W F
R501	1-249-409-11	CARBON	220	5%	1/4W	R638	1-249-420-11	CARBON	1.8K	5%	1/4W
R502	1-249-409-11	CARBON	220	5%	1/4W	R639	1-136-165-00	(West Germany)...CARBON	10	5%	1/2W F
R505	1-249-429-11	CARBON	10K	5%	1/4W	R640	1-247-752-11	CARBON	1K	5%	1/2W
R506	1-249-429-11	CARBON	10K	5%	1/4W	R641	1-247-752-11	CARBON	1K	5%	1/2W
R507	1-249-437-11	CARBON	47K	5%	1/4W	R642	1-212-881-11	FUSIBLE	100	5%	1/4W F
R508	1-249-437-11	CARBON	47K	5%	1/4W	R643	1-212-881-11	FUSIBLE	100	5%	1/4W F
R509	1-247-895-00	CARBON	470K	5%	1/4W	R651	1-249-431-11	CARBON	15K	5%	1/4W
R510	1-249-431-11	CARBON	15K	5%	1/4W	R652	1-249-421-11	CARBON	2.2K	5%	1/4W
R511	1-247-903-00	CARBON	1M	5%	1/4W	R653	1-247-895-00	CARBON	470K	5%	1/4W
R512	1-249-439-11	CARBON	68K	5%	1/4W	R654	1-249-421-11	CARBON	2.2K	5%	1/4W
R513	1-249-435-11	CARBON	33K	5%	1/4W	R655	1-249-425-11	CARBON	4.7K	5%	1/4W
R514	1-247-895-00	CARBON	470K	5%	1/4W	R656	1-247-903-00	CARBON	1M	5%	1/4W
R515	1-249-432-11	CARBON	18K	5%	1/4W	R657	1-249-429-11	CARBON	10K	5%	1/4W

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
R658	1-249-429-11	CARBON	10K	5%	1/4W
R681	1-249-425-11	CARBON	4.7K	5%	1/4W
R682	1-249-438-11	CARBON	56K	5%	1/4W
R683	1-249-438-11	CARBON	56K	5%	1/4W
R684	1-249-414-11	CARBON	560	5%	1/4W
R685	1-247-756-11	CARBON	2.2K	5%	1/2W
R686	1-247-756-11	CARBON	2.2K	5%	1/2W
R687	△.1-247-727-11	CARBON	10	5%	1/2W F
R688	1-249-420-11	CARBON	1.8K	5%	1/4W
R689	△.1-136-165-00	(West Germany)...CARBON	10	5%	1/2W F
R691	1-249-417-11	CARBON	1K	5%	1/4W
R692	1-249-439-11	CARBON	68K	5%	1/4W
R693	1-249-441-11	CARBON	100K	5%	1/4W
R701	1-217-151-00	RES, METAL PLATE	0.22		
R702	1-249-414-11	CARBON	560	5%	1/4W
R703	1-249-414-11	CARBON	560	5%	1/4W
R704	1-247-881-00	CARBON	120K	5%	1/4W
R705	1-249-441-11	CARBON	100K	5%	1/4W
R706	1-249-433-11	CARBON	22K	5%	1/4W
R707	1-249-429-11	CARBON	10K	5%	1/4W
R708	1-249-433-11	CARBON	22K	5%	1/4W
R709	1-249-433-11	CARBON	22K	5%	1/4W
R710	△.1-247-744-11	CARBON	270	5%	1/2W F
R711	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-437-11	CARBON	47K	5%	1/4W
R751	1-217-151-00	RES, METAL PLATE	0.22		
R752	1-249-414-11	CARBON	560	5%	1/4W
R753	1-249-414-11	CARBON	560	5%	1/4W
R754	1-247-881-00	CARBON	120K	5%	1/4W
R851	△.1-247-236-00	CARBON	680	5%	1/2W F
R852	△.1-247-236-00	CARBON	680	5%	1/2W F
R901	1-249-426-11	CARBON	5.6K	5%	1/4W
R902	△.1-213-078-61	FUSIBLE	56	5%	1W F
R936	1-249-393-11	CARBON	10	5%	1/4W
R951	1-249-425-11	CARBON	4.7K	5%	1/4W
R952	1-249-426-11	CARBON	5.6K	5%	1/4W
R953	1-249-429-11	CARBON	10K	5%	1/4W
R954	1-249-429-11	CARBON	10K	5%	1/4W
R955	1-249-417-11	CARBON	1K	5%	1/4W
R956	1-249-429-11	CARBON	10K	5%	1/4W
R957	1-249-429-11	CARBON	10K	5%	1/4W
R958	1-249-430-11	CARBON	12K	5%	1/4W
R959	1-249-441-11	CARBON	100K	5%	1/4W
R960	1-249-425-11	CARBON	4.7K	5%	1/4W
R961	1-249-425-11	CARBON	4.7K	5%	1/4W
R962	1-249-427-11	CARBON	6.8K	5%	1/4W
R963	1-249-429-11	CARBON	10K	5%	1/4W
R964	1-249-411-11	CARBON	330	5%	1/4W
R965	1-249-429-11	CARBON	10K	5%	1/4W
R966	1-249-425-11	CARBON	4.7K	5%	1/4W
R967	1-249-419-11	CARBON	1.5K	5%	1/4W

Ref.No.	Part No.	Description
RV301	1-237-646-11	RES, VAR, SLIDE 50K
RV302	1-237-647-11	RES, VAR, SLIDE 100K
RY701	1-515-503-00	RELAY
RY951	△.1-515-516-00	(UK, West Germany)...RELAY
RY951	△.1-515-601-11	(E, Saudi Arabia)...RELAY
S301	1-554-303-21	SWITCH, KEY BOARD (63Hz)
S302	1-554-303-21	SWITCH, KEY BOARD (150Hz)
S303	1-554-303-21	SWITCH, KEY BOARD (400Hz)
S304	1-554-303-21	SWITCH, KEY BOARD (1kHz)
S305	1-554-303-21	SWITCH, KEY BOARD (3kHz)
S306	1-554-303-21	SWITCH, KEY BOARD (6kHz)
S307	1-554-303-21	SWITCH, KEY BOARD (14kHz)
S308	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 1)
S309	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 2)
S310	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 3)
S311	1-554-303-21	SWITCH, KEY BOARD (EQ FLAT)
S312	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)
S313	1-554-303-21	SWITCH, KEY BOARD (EQ MEMORY)
S314	1-554-303-21	SWITCH, KEY BOARD (EQ LEVEL -)
S315	1-554-303-21	SWITCH, KEY BOARD (EQ LEVEL +)
S316	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S317	1-554-303-21	SWITCH, KEY BOARD (CD)
S318	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S319	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S320	1-554-303-21	SWITCH, KEY BOARD (VOLUME/+)
S321	1-554-303-21	SWITCH, KEY BOARD (VOLUME/-)
S322	1-554-303-21	SWITCH, KEY BOARD (MUTING)
S323	1-554-419-00	SWITCH, PUSH (1 KEY)(DBFB, SAT)
S951	1-554-303-21	SWITCH, KEY BOARD (POWER)
S952	△.1-571-437-11	(E, Saudi Arabia)SWITCH, POWER VOLTAGE CHANGE
T901	△.1-448-879-11	(E, Saudi Arabia)...TRANSFORMER, POWER
T901	△.1-448-880-11	(UK, West Germany)...TRANSFORMER, POWER
T951	△.1-449-194-11	TRANSFORMER, POWER
TM901	1-536-705-00	TERMINAL BOARD (SP)
VZ951	△.1-807-180-31	VARISTOR SNR-14A471U
X301	1-527-532-00	OSCILLATOR, CERAMIC
X302	1-527-532-00	OSCILLATOR, CERAMIC
X951	1-567-819-11	VIBRATOR, CERAMIC

Note: The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.